

The Bancroft Library

University of California • Berkeley

Gift of

ROBERT PALFREY UTTER



Dec. 25, 1887.



H. Brown del.

T. Andrews sc.

Capitol of the United States

Boston, Samuel Walker

Vol. I page 320



HISTORY

AND TOPOGRAPHY

OF THE

UNITED STATES.

H. Billings Del.

A. C. Warren Sc.

Entered according to act of Congress in the year 1845 by Samuel Hillier in the Clerk's Office of the District Court of Massachusetts

347

THE
HISTORY AND TOPOGRAPHY
OF
THE UNITED STATES
OF
NORTH AMERICA,

BROUGHT DOWN FROM THE EARLIEST PERIOD;

COMPRISING

POLITICAL AND BIOGRAPHICAL HISTORY; GEOGRAPHY, GEOLOGY, MINERALOGY, ZOOLOGY, AND BOTANY; AGRICULTURE, MANUFACTURES
AND COMMERCE; LAWS, MANNERS, CUSTOMS, AND RELIGION; WITH A TOPOGRAPHICAL DESCRIPTION OF
THE CITIES, TOWNS, SEA-PORTS, PUBLIC EDIFICES, CANALS, &c. &c.

BY

JOHN HOWARD HINTON, A. M.

ASSISTED BY SEVERAL LITERARY GENTLEMEN IN ENGLAND AND AMERICA.

WITH ADDITIONS AND CORRECTIONS,

BY

SAMUEL L. KNAPP, ESQ.;

AND

A CONTINUATION TO THE PRESENT TIME,

BY

JOHN OVERTON CHOULES, D. D.

Third Edition.

ILLUSTRATED WITH NUMEROUS ENGRAVINGS.

VOL. II.

BOSTON:

PRINTED AND PUBLISHED BY SAMUEL WALKER.

1852.

277

WITNESSETH AND TESTIFYETH

THE UNITED STATES

OF NEW YORK

IN SENATE

IN SENATE

Entered according to Act of Congress, in the year 1850, by

SAMUEL WALKER,

In the Clerk's Office of the District Court for the District of Massachusetts.

PREFACE

TO VOL. II. OF THE AMERICAN EDITION.

IN the few prefatory remarks which accompany the first volume of this work, I have stated, that my observations on Mr. Hinton's book were confined principally to events connected with American history, and to that portion, in particular, which includes the occurrences of the American Revolution. That they are of some extent, if not of some value, the student of American annals will be able to determine.

In the second volume, I have carefully surveyed the mass of information which the London editor has brought together on a great variety of important topics. His information will be admitted to possess much accuracy, and to be of a recent date. Nevertheless, it was deemed but justice to that public who have so largely countenanced this undertaking, that many particulars which the author did not possess, or had entirely overlooked, should be added to this reprint; and when it is observed, that the additions to this part of the work now given by the American editor are nearly equal in extent to the entire quantity in the original volume, I am persuaded that I shall receive at least the approbation of the reader for good intentions, if not for the exercise of a wholesome discretion, and a desire to make this book on American matters a repository of facts of peculiar importance to every inquirer on the topics to which it relates.

In order the better to dispose of my materials, I have looked with a becoming regard to the statistics, and other information, which the author has given of the several states, and under different heads. But few portions of his account of the country have been examined, without some additions or amendments; and if a disproportion present itself, concerning the manner in which some parts have been augmented, I must plead, that sometimes my materials led me to the measure, and that I felt that special subjects required the revision and enlargement that I have thus bestowed. Moreover, Mr. Hinton himself has not always been governed by the relative value of his subject, and different observers are supposed to look even on the same object with different eyes. I have also had several other difficulties to overcome. Almost every individual state of the confederacy now lays claim to its topographer and historian. Maine, for instance, has already called forth several topographical works; and no less than three authors, each of considerable merit, have published her historical occurrences. In such a case, the few pages of Hinton on this member of the

Union might have been swelled to as many hundred ; but a reference to authorities is nearly all that the prescribed limits allowed.

The state of New York, in the original edition, occupies no inconsiderable space in the work. I have, however, still farther largely added to it, because the empire state demanded it. Her mighty efforts in internal improvements, her commercial importance, her location, and other reasons, had their weight in my determination. The reader, therefore, will not be dissatisfied by finding in this edition the elaborate memoir of the late Cadwallader D. Colden on the canal history of this great state ; it is too precious a document not to be preserved in a way that it can readily be had access to.

I have, with a similar view to future benefit, enriched my pages with a minute and circumstantial account of the city of New York, furnished me by my friend, Dr. J. W. Francis, who has also afforded me other communications of value, and occasionally directed my attention to objects of special inquiry throughout the work. His ample library of American materials has also yielded to me many facilities. To him, and to my other friends, who have felt solicitous that Hinton's United States should be rendered the more valuable by the labours of the American editor, and to all who have contributed to this object, I beg to return my thanks.

The paper from the pen of Dr. Metcalfe, which was not ready for its proper place in the volume, the editor is obliged to bring in at the close of his labours. He does not feel himself sufficiently qualified in this department of philosophy to express a decided opinion in the matter ; but he has no hesitation in saying, that the reader will find in this article many interesting facts, with novel and ingenious observations, worthy the profound attention of the man of science, and the curious observer of the laws of nature in every walk of life.

Whatever the fastidious critic may observe, I cannot but remark, that the volumes now sent forth will be found to embrace a stock of information which eminently places the work among the most available as a book of reference, as well as for popular reading.

S. L. K.

CONTENTS OF VOL. II.

BOOK I.

PHYSICAL GEOGRAPHY.

CHAPTER I.

GENERAL OUTLINE—MOUNTAINS—RIVERS, &c.

Various accessions of territory.—Boundaries.—General physical divisions.—Atlantic Slope.—Divisions of the Atlantic Slope.—South-western Bay.—Middle Bay.—North-east Bay.—Gulf of Mexico.—Appalachian Mountains.—Rivers flowing into the Atlantic.—Region bordering on the Pacific Ocean.—Valley of the Mississippi.—Basin of the St. Lawrence.—Lake Superior; Lake Michigan; Lake Huron; Lake Erie; Lake Ontario.—Quantity of water in the Lakes.—River St. Lawrence.—Lakes George and Champlain.—Capacity of the St. Lawrence basin.—Valley of the Mississippi.—Divisions of the Mississippi valley.—Valley of the Ohio.—Source of the Mississippi.—Aspect of the Mississippi valley.—Source of the Missouri.—River Platte.—Valley of the Missouri.—Valley of the lower Mississippi.—Arkansas River, and Red River.—Mouth of the Mississippi.—Comparison of the Mississippi and the St. Lawrence.—Inundations of the Mississippi.—Navigation of the Mississippi, Missouri, and Ohio.—Bed of the Mississippi.—Mountains in the Mississippi valley—Ozark Mountains, and Black Mountains.....p. 1 to 18.

Additions to the English Edition.

Physical geography.—Description of the valley of the Mississippi.—Reference to Flint's works.—Observations on the Phenomena of the Great Lakes, by De Witt Clinton; tides on these masses of waters, as shown from the works of La Hontan, Pownall, Wright, Storrow, Woodward, Mitchill, Stickney, and many others.—The overflow of the waters in Lake Erie; periodical rises; one beginning 1811, and continuing to 1815.—Mackenzie's remarks on the decrease of water in Lake Superior.—Volney's opinion that Lake Ontario is the crater of a volcano.—The effects of earthquakes on springs and lakes.—The swells of Lake Erie have been followed by shocks of earthquakes.....p. 14 to 19.

CHAPTER II.

CLIMATE, SOIL, &c.

General excellence of the climate.—Very cold region; cold region; temperate region; warm region; and hot region.—General view of temperature.—Value of thermometrical observations.—Course of the winds, and state of the atmosphere.—Prevailing winds above N. Lat. 35°; and prevailing winds below N. Lat. 35°.—Mildness of climate on the Pacific; supposed mildness of the interior.—Climate of the Mississippi valley; winters; summers; coldness compared with Europe; influence of the Gulf Stream, and of the trade winds; whether the climate has improved, or the winters become milder.—Method of finding the mean temperature of any place.—Rains in the United States.—Soil of the United States: Atlantic Slope; Mississippi valley; timbered country; barrens; prairies.—Soil in the different parts of the Mississippi valley.—Soil beyond the Chippewyan Mountains.—Diversity of soils.—Salubrity of the United States.—Effect of clearing the forests.—Inferior salubrity of the bluffs.....p. 18 to 39.

Additions to the English Edition.

The opinions of Dr. Chalmers, Ellicot, and Rush, touching the climate, soil, diseases, &c.; and those of an earlier date by Lt. Governor Colden, on the diseases of New York; changes which have taken place if his facts are correct; the same author on the climate.—Dr. Hosack's Essays upon the subject.—Dr. J. W. Francis on the cholera asphyxia, in which the same subject is discussed, and the causes of pestilence in the city of New York.....p. 34 to 39.

BOOK II.

NATURAL HISTORY.

CHAPTER I.

GEOLOGY.

Progress of geological research.—Geological structure connected with physical aspect.—Chippewyan Mountains: primitive and transition rocks; secondary rocks; sandstone; trap rocks; greenstone; amygdaloid.—Chippewyan desert.—Appalachian Mountains: primitive rocks; transition rocks.—Valley of the Ohio and Upper Mississippi: secondary rocks.—Central district of the Mississippi valley: Ozark Mountains; granite districts.—Upper Mississippi.—Black Mountains.—Upper Missouri.—Atlantic Slope: secondary strata; ferruginous sand formation; tertiary formations.—Oregon.—Character of the Appalachian Mountains.—Arrangement of

CONTENTS.

American strata.—Formation of the Mississippi valley.—Evidences of diluvial action.—State of Lake Huron.—Alluvial formations.—Fossil remains.—Cave fossils.—Living fossils.....p. 40 to 69

Additions to the English Edition.

Remarks on Professor Eaton's geology.—Hayden's geological researches.—Dr. Van Rensselaer's list of fossils found in the United States.—Dr. Dekay upon the same subject.—Dr. Bigsby's enumeration of fossils in his geological papers on the country around Lakes Huron and Erie.....p. 68 to 70

CHAPTER II.

MINERALOGY.

Mineral contents of the primitive rocks ; of the transition rocks ; of the formations east of the Appalachian Mountains.—Specific minerals : gold ; silver ; mercury ; copper ; iron ; lead ; and other metals.—Coal.—Graphite and petroleum.—Salt.—Mineral waters.—Gaseous substances.—Conclusion.....p. 69 to 84.

Additions to the English Edition.

Professor Hosack's remarks on the qualities of the Ballston waters ; notes of several analyses of these waters ; fixed air to be found in them in greater abundance than in any other waters ; Dr. Thatcher's opinion of these waters ; Dr. Steel on the use of them.—Spring in Cliff street, and the analysis of the waters.—The Bedford springs.—The Berkeley springs.—Mitchill's experiments on the Saratoga waters.—Macneven's analysis of the waters around New York.—Dr. Drake's opinion of the mineral springs in Kentucky.—Dr. Francis's account of the sulphur springs of Avon ; the Indian history of these springs ; Red Jacket's opinion of them ; their uses of these waters ; the analysis of these waters ; considered by Dr. Francis as second to no medicinal waters in the United States.....p. 76 to 82.

CHAPTER III.

BOTANY.

General character of the vegetation.—Forest trees : oak ; walnut ; maple ; birch ; ash ; elm ; chestnut ; beech ; pine ; white pine ; spruce ; cypress ; acacia ; poplar.—Ornamental trees : magnolia ; catalpa ; bow-wood ; China tree ; dog-wood ; red-bud ; rhododendron ; kalmia ; snowberry ; coral tree ; palmetto.—Fruit-bearing trees and shrubs : papaw ; cherry ; persimon ; plum ; apple ; mulberry ; vine ; gooseberry.—Cane.—Flax.—Creeping plants.—Grasses.—Rush.—Pea vine.—Wild rice.—Palmetto.—May apple.—Weeds.—Various plants.—Aquatic plants.—Parasitic plants.....p. 84 to 99.

Additions to the English Edition.

Letter of Governor Clinton to Sir James Edward Smith on the wild wheat supposed by Governor Clinton to be an indigenous plant.....p. 98 99

CHAPTER IV.

ZOOLOGY.

Mammiiferous animals : bat ; cougar ; lynx ; black bear ; grizzly bear ; wolf ; fox ; otter ; skunk ; raccoon ; badger ; glutton ; ermine ; shrew ; mole ; opossum ; beaver ; musk-rat ; rat and mouse ; marmot ; squirrel ; porcupine ; hare ; sloth and elephant ; deer ; antelope ; buffalo.—Quadrupeds common to both continents.—Cetaceous animals.—Ornithology : vulture ; eagle ; fish-hawk ; falcon ; owl ; burrowing owl ; parrot ; cuckoo ; wood-pecker ; red-headed wood-pecker ; king-fisher ; oriole ; starling ; cow-bunting ; raven ; magpie and blue jay ; night-hawk, &c. ; swallow ; flycatcher ; mocking-bird ; cat-bird ; robin ; blue-bird ; wren ; creepers ; humming-bird ; pigeon ; partridge ; wading-birds ; crane ; purre ; goose ; wild duck ; canvass-back duck ; widgeon ; goosander ; snake-bird ; swan.—Birds of the Atlantic and the Mississippi compared.—Reptiles : snakes ; harmless serpents ; lizard ; alligator ; tortoise, and other reptiles.—Frogs.—Fish.—Oceanic vampire.—Insects.....p. 100 to 138.

Additions to the English Edition.

Notice of Dr. Mitchill's elaborate memoir of the fishes of New York waters.—The American Cuvier makes 147 species, 19 varieties, total 166.—Governor Clinton's paper on the fishes of the western waters, proving that our waters are teeming with fishes that are nutritious and palatable ; the salmon, the trout, the bass, the pike, and all that the epicure seeks.....p. 100 to 138.

BOOK III.

STATISTICS.

CHAPTER I.

AGRICULTURE.

Division into northern and southern ; neglected as a science ; progressive improvement.—Disappointment of English agriculturists.—First erections on new lots.—Clearing the land and first crops.—Manures.—Draining and fencing.—Maize, or Indian corn : wheat ; rye and barley ; turnips, &c. ; hemp ; flax.—Animals.—Implements.—Southern states : tobacco ; cotton ; rice ; sugar-cane ; indigo ; mulberry-tree and silk-worm ; vine and olive.—Horticulture.....p. 139 to 159.

CONTENTS.

Additions to the English Edition.

The English editor's mistake in thinking that horticulture was but little attended to in the United States.—The Berkshire Horticultural Society.—Similar societies in Pennsylvania, New York, &c.—Dr. Francis's Address to the New York Horticultural Society, showing the number of eminent men who have devoted themselves to this pursuit in the United States; he adduces proofs that Flora has not been neglected; he gives the names of the first men in the country as lovers of the lovely pursuit; this distinguished philosopher has taken a wider field than the English author was aware of, and furnishes much new matter on the subject.—The apple-tree, the vine, the culture of cotton and sugar, are considered in this article, from the pen of Dr. Francis.—Livingston, Mitchill, Hosack, distinguished as horticulturists.....p. 152 to 158.

CHAPTER II.

MANUFACTURES.

State of manufactures before the constitution of 1789.—Effect of the new revenue laws.—Account of manufactures in 1810.—Advantageous effects of the war.—Imposition of additional duties in 1816; further increase in 1824.—Unsuccessful attempt to raise the duty on woollens in 1826.—Proceedings of congress in 1828.—Circumstances which favour the protecting system of the United States.—Manufactures of cotton and woollens.—Household manufactures.—Manufactures of iron.—Circumstances favourable to some establishments.—Tariff of 1828 more favourable to the miners than the manufacturers.—Glass; reduction in the value of the article, but the price of labour maintained.—Earthenware.—Hats.—Shoes.—Furniture.—Ship-building.—Steam-boats.—Paper.—Type, and books.—Distillation of spirits.—Minerals.—Manufactures exported.—Tariff Tables.....p. 159 to 174.

Additions to the English Edition.

Ship-building.—Steam-boats of the western waters.—Locomotive engines manufactured in this country, particularly by the Stevenses of New York.—The manufacture of paper, types, books; names of the stereotype publishers; the extent of the business.—The distillation of ardent spirits.—The origin of stereotyping; an American invention; Lt. Governor Colden's letter to Dr. Franklin, and his answer; a curious matter of history; remarks upon this subject, going far to insure Colden the honor of the invention.....p. 166 to 172.

CHAPTER III.

COMMERCE AND NAVIGATION.

State of commerce previous to the constitution of 1789.—Provision of the new constitution.—Rapid increase of commerce from 1790 to 1806.—State of commerce from 1807 to 1830.—Exports.—Products of the sea; of the forest; and of agriculture.—Exports of manufactures.—Foreign goods exported.—Imports.—Articles admitted free of duty.—Articles subjected to duties: cotton; woollens; silks; manufactures of flax; manufactures of hemp; carpeting; wines; fruits; spirits; teas; coffee; iron; paper; books; glass; cigars.—Raw materials imported: hemp; flax; wool; salt; and coal.—Total amount of imports.—Balance of trade.—Navigation; its importance to the United States; fostered by legislative enactments; rapidity of its increase; promoted by the wars of Europe; depressed by the proceedings of England and France, and by the embargo and the war with England.—Cause of the present stationary state of American navigation.—Amount of tonnage for the year 1829.—Tables of Commerce.....p. 175 to 195.

CHAPTER IV.

FINANCES—REVENUE, EXPENDITURE, DEBT.

Revenue.—Customs.—Sale of public lands.—Title of the United States.—Survey and divisions of public lands.—Reservations.—Allowance for survey.—Terms of sale.—Squatters.—Proposed reduction of price.—Appropriation for roads and schools.—Quantity of land surveyed.—Beneficial effect of the possession of surplus land.—Amount received for land.—Internal revenue.—Direct taxes.—Post-office.—Rates of postage.—Mint establishment.—Coins.—Amount of coinage.—Sources from whence the gold coined is derived.—Value of gold rated too low.—Observations on the nature of the circulating medium.—Amount of the circulating medium.—Number of banks.—United States bank.—First charter in 1791.—Expiration of the charter in 1811.—A new establishment chartered in 1816; independent of the government; amount of circulation and deposits.—Expenditure of the United States.—Civil list.—Miscellaneous disbursements.—Military establishment; pay, &c.; ordnance, &c.—Military academy; internal improvements; revolutionary pensions.—Naval establishment; number and rate of vessels; navy yards; dry docks; improvements; accumulation of timber and stores.—Public debt; highest amount and gradual reduction; entire liquidation proposed.—Difficulty of disposing of or reducing the surplus revenue.—Views of the administration.—An appropriation of the excess suggested.—Financial Tables.p. 196 to 218.

Additions to the English Edition.

The bills passed June, 1834, regulating the gold coins in the United States; they are now the laws of the land upon that currency.....p. 204.

CHAPTER V.

POPULATION.

The rapidity of its increase compared with European nations.—Relative increase of the free and slave population.—Effect of immigration.—Dr. Seybert's calculation.—Calculations of Godwin and Booth.—Different estimates of the ratio of deaths.—Opinions of Mr. Sadler.—Estimate of number of immigrants, from the North American Review.—Estimate formed from the census of 1820.—Census of 1830.—Details of the census of 1820.—Number of persons 100 years old.—Population Tables.....p. 219 to 224.

CONTENTS.

BOOK IV.

STATE OF SOCIETY.

CHAPTER I.

POLITICAL INSTITUTIONS AND JURISPRUDENCE

General principles.—Guarantees of liberty in the United States.—Constitution of 1787-9, &c.—Legislative powers.—Members of house of representatives, how chosen; qualifications of.—Apportionment of representatives.—Vacancies, how filled.—House of representatives choose officers.—Senate, how chosen.—Senators classed.—Senators' qualification.—Vice-president's vote.—Senate choose officers; try impeachments.—Judgment on impeachment.—Elections, how held.—Congress assemble annually.—Elections, how judged; quorum of senate and house of representatives.—Rules.—Journals by each house.—Adjournment.—Compensation; privileges; arrests.—Members not appointed to office.—Bills for raising revenue, to originate in the house of representatives.—Bills, their formalities.—Resolutions and votes to be presented to the president of the United States.—Congress lay taxes; borrow money; regulate commerce, naturalization, bankruptcies, coinage, &c.; punish counterfeiters; establish post-offices and post-roads; promote science and useful arts; constitute courts; declare war; raise armies; maintain navy and militia.—Congress exercise exclusive jurisdiction and make laws.—Importation of persons after 1808.—Habeas corpus.—Attainder.—Tax.—No exportation duty.—Money, how drawn.—Titles not conferred.—States not to make treaties.—States not to lay imposts, &c., or tonnage.—Executive power.—Electors, how appointed; day electors meet; qualification of president of United States; removal of president of United States; President's of United States compensation; oath.—President's of United States powers: to make treaties; appoint officers; fill vacancies.—President's of United States duties.—Officers removable by impeachment.—Judicial power, and tenure of judges.—Extension of judicial power.—Supreme court; jurisdiction; trials by jury; treason; attainder.—Acts of states accredited.—Citizens' privileges.—Persons charged with crimes, fleeing.—New states admitted.—Territory of United States.—Republican form.—Amendments, how attained.—Debts prior to adoption of Constitution.—Treaties the law of the land.—Oath or affirmation to members.—Ratification.—Establishment of religion.—Right of the people to keep arms.—Soldiers, how to be quartered.—Persons, &c., secured.—Persons to answer for infamous crimes, &c.—Criminal prosecutions.—Trial by jury.—Excessive bail, fines, and punishments.—Enumeration of certain rights.—Powers not delegated.—Judicial power.—Electors for president and vice-president of the United States, &c.—Source of the Constitution.—Conventions.—Massachusetts convention of 1820.—Convention at Boston in 1689.—Constituency of conventions.—Limited powers of the general government.—Date of the commencement of American law.—General assembly of 1787 adopts a new constitution.—Legislative power.—Concurrent powers of individual states.—Supremacy of law over discretion.—Exceptions.—The executive authority.—Appointment and removal of public functionaries.—State executives.—Township meetings.—Local expenditure, &c.—The judiciary.—The supreme court.—Circuit courts.—District courts.—Appeals.—Distinct jurisdictions of the general and the state judiciaries.—State judiciaries.—Separation of the judicial from the legislative power.—Independence of the judiciaries.—Justices of peace.—Constitutionality of laws.—American law.—Common law.—Equity.—Law of debtor and creditor.—Mercantile law.—Admiralty law.—Criminal laws.—Imprisonment under game and vagrant laws.—Prison discipline.—Proportion of criminals to the population.—Examining courts.—Punishments fixed by juries.—Laws against drunkards and duellists.—Law officers and public prosecutors.—Police.—Military power.—Military obedience and responsibility.—Codes of law.—American estimate of English lawyers.—Extensive studies of American lawyers.—Reports.—Cheapness of law.—Law schools.—Publicity.—American law manuscripts.p. 225 to 252.

CHAPTER II.

RELIGION.

Interest of the subject.—Religious aspect not uniform.—View of the different sects: Roman Catholics; Episcopalians; Presbyterians; Congregationalists; Baptists; Christians; Unitarians; Methodists; Friends; Dutch Reformed Church; German Reformed Church; Lutheran Church; United Brethren; Universalists; Swedenborgians; Shakers.—No religious establishment.—Gradual abandonment of establishments.—State of religion.—Evils ascribed to the want of an establishment.—Revivals of religion.—Theology of New England.—Camp-meetings.—Theological seminaries.—Benevolent institutions.—General review.p. 252 to 271.

CHAPTER III.

LITERATURE—ARTS—MANNERS.

Language.—National education: public schools; infant schools; improvement of teachers; private schools: colleges.—Literature. newspapers; reviews and magazines; annuals; original works; dramatic compositions; poets.—American intellectual power.—The arts.—American painters.—Manners: filial obedience; conjugal relation; servants; social intercourse; marriages; public assemblies; dress; feeling of independence; coldness of manners, &c.—Titles.—Duelling.—Sectional characteristics.—Personal liberty in America.p. 272 to 310

Additions to the English Edition.

The origin and progress of the English language; the ancient Saxon; the beauty, sweetness, and copiousness of the English language.—The attention paid to preparing schoolmasters.—Terms of admission into Yale College; the whole course of instruction in that seminary occupying four years; the object of the system of education; the expenses of the course of instruction; the theological department; the medical institution.—American literature: Winthrop; Elliot; Hooker; Shepherd; Nathaniel Ward; Buckley; Rogers; Cotton; Anne Bradstreet; James Otis; Samuel Cooper; Josiah Quincy; John Dickinson; William Henry Drayton; William Livingston; David Dulany; the Lees; Mr. Jefferson; Joseph Warren; John Adams; George Washington; Alexander Hamilton; Dr. Belknap, &c. &c., to the end of the chapter.—State of society.—Mrs. Trollope's opinion of the occupation of females in the United States.—The influence of republican manners.p. 272 to 310.

CONTENTS.

CHAPTER IV.

INDIANS.

Characteristics of the Indians.—Customs of the Indians; their religion; their wars and pursuits; the extent and limits of their claims to the land; causes producing a diminution of their number.—Numbers of Indians in the United States.—General failure of attempts to improve their condition.—Favourable state of the Cherokees; counter statement.—Indian question in Georgia.—Indian board of emigration.....p. 311 to 332.

Additions to the English Edition.

De Witt Clinton's history of the Indians; their character and habits; the Indians considered as philosophers and grammarians; the account of the invention of the Cherokee alphabet; George Guess, or See-quah-yah, the inventor.—The assistance given to the Cherokees by the United States.—The weapons and clothing of the Indians.—The eloquence of the Indians; instances given.—Passages of their history, &c. &c.....p. 311 to 332.

BOOK V.

TOPOGRAPHY.

CHAPTER I.

NEW ENGLAND.—NEW HAMPSHIRE—VERMONT—MASSACHUSETTS—RHODE ISLAND—CONNECTICUT.

General design.—Maine: boundaries; surface; climate; soil; commerce; institutions; religious bodies; chief towns.—New Hampshire: boundaries; surface; climate; soil; trade; institutions; religious bodies; chief towns.—Vermont: boundaries; surface; climate; soil; trade; institutions; religious bodies; chief towns.—Massachusetts: boundaries; surface; climate; soil; trade; canals and rail-roads; institutions; religious bodies; slavery abolished; Boston, and other towns.—Rhode Island: boundaries; surface; climate; soil; trade; institutions; religious bodies; chief towns.—Connecticut: boundaries; surface; climate; soil; trade; institutions; religious bodies; chief towns.....p. 333 to 348.

Additions to the English Edition.

Sullivan's and Williamson's Histories of Maine, 335.—Belknap's History of New Hampshire, 337.—Letters on Vermont, by John A. Graham.—Williams's History of Vermont.....p. 339.

CHAPTER II.

NEW YORK—NEW JERSEY—PENNSYLVANIA.

New York: extent; surface; falls of Niagara; soil; climate; roads and canals; trade; institutions; religious bodies; chief towns.—New Jersey: extent; surface; climate; canals; rail-roads; trade; institutions; religious bodies; chief towns.—Pennsylvania: extent; surface; soil; canals; trade; institutions; education; religious bodies; Philadelphia, and other towns.....p. 348 to 408.

Additions to the English Edition.

Cadwallader D. Colden's Memoir of the great canal.—The early history of the state.—The present appearance of the country.—The early account of the lakes.—The first suggestions of connecting the waters of the lakes with those of the ocean; from whom they came.—Washington, at the close of the revolutionary war, engaged in the cause of uniting the lakes with the Atlantic.—Christopher Colles.—George Clinton's speech to the legislature.—Western Company.—Dr. Hugh Williamson.—De Witt Clinton's bill.—The great share he had in effecting this great work.—Governor Tompkins's speech to the legislature of New York.—The commissioners; and their proceedings.—On the 4th of July, 1817, the canal was commenced at Rome; finished in eight years and four months; the tolls; the benefits of this great work.—Length of the Erie Canal.....p. 350 to 384.

John Stevens, of Hoboken, commenced his experiments on steam in 1791; invented the first tubular boiler.—1797, Chancellor Livingston made a boat.—Livingston and Stevens united their efforts in 1802.—Fulton joined them in 1806.—The next year a boat went into operation.—Progress of the invention.....p. 384, 385.

An account of the city of New York, from the pen of Dr. John W. Francis.—The settlement.—The early history.—Population at different times.—The materials of the early buildings.—Bay and harbour.—Commerce, exports and imports.—The domestic manufactures.—The dry dock and railway.—Public buildings: the City Hall; Masonic Hall; Clinton Hall; the Record Office.—Churches and places of public worship.—The New York city marble cemetery.—American Bible Society.—American Tract Society.—The Book Concern of the Methodist Episcopal church.—Literary institutions: Columbia College; University of the City of New York; the General Theological Seminary of the Protestant Episcopal Church of the United States; Mercantile Library Association.—Medical history of New York: the College of Physicians and Surgeons of the University of the State of New York; Rutgers Medical College; New York Hospital; Asylum for the Insane.—Literary and Scientific Societies: New York Historical Society; Literary and Philosophical Society; Lyceum of Natural History; Horticultural Society; Academy of Arts; National Academy of the Arts of Design; New York Society Library; the Athenæum; Medical Society of the City and County of New York.—Charities.—School fund and common schools.—Penitentiary system.—Municipal government.—Arrivals of emigrants.—The expenses of the state.—Courts.—The police of New York.—Public amusements.—Periodical literature.—Mortality.—Character of the population of New York.....p. 389 to 401.

Smith's History of New Jersey, and Gordon's Gazetteer.....p. 402.

CONTENTS.

CHAPTER III.

OHIO—INDIANA—ILLINOIS—MISSOURI.

Ohio: extent; surface and climate; produce; canals; trade; institutions; chief towns.—Indiana: extent; surface; climate and produce; institutions; religious bodies; chief towns.—Illinois: extent; surface; soil and produce; minerals; canals and roads; education; religious bodies; chief towns.—Missouri: extent; surface; soil; produce; climate; minerals; trade; institutions; religious bodies; chief towns.....p. 408 to 418.

CHAPTER IV.

DELAWARE—MARYLAND—DISTRICT OF COLUMBIA—VIRGINIA—KENTUCKY—NORTH CAROLINA—TENNESSEE.

Delaware: extent; surface; soil, climate, and produce; canal; religious bodies; chief towns.—Maryland: extent; surface; soil and produce; trade; canals and roads; institutions; religious bodies; chief towns.—District of Columbia: Washington; Alexandria; canals; religious bodies.—Virginia: extent; surface; soil and produce; scenery; institutions; religious bodies; chief towns.—Kentucky: extent; surface; soil; caves; produce; canal; institutions; religious bodies; chief towns.—North Carolina: extent; surface; soil and produce; minerals; agriculture; education; religious bodies; chief towns.—Tennessee: extent; surface; climate; soil and produce; institutions; religious bodies.....p. 418 to 458.

Additions to the English Edition.

History of the District; the government there.—The taking of Washington.—The schools in Washington; the streets; the market; soil; climate; the capacities of the situation.—The Capitol of the United States; the artists who ornamented the edifice, and their productions.—The president's house; appearance; rooms and finish.—Meridian Hill.—The library of congress.—Other libraries.—Columbian Institute.—Periodicals.—Colonization Society.—Clergy.—The bar of the District of Columbia.—The courts.—The medical faculty.—The manners and customs of Washington city.—The nunnery.—The system of government in the schools of these ecclesiastical seminaries.....p. 422 to 440.
The plain; the rivers; the soil; the hypothesis of the flat country; the swamps; the canals; the rice; digging the canal shows the formation of the soil.—The extent of the swamps.—The analogy between this country and Poland, as described by Herodotus.—Changes in the South Sea navigation.—Diseases of North Carolina.—Much learned matter on the subject of diseases...p. 441 to 460

CHAPTER V.

SOUTH CAROLINA—GEORGIA—ALABAMA—MISSISSIPPI—LOUISIANA.

South Carolina: extent; surface; soil; climate; roads; institutions; religious bodies; chief towns.—Georgia: extent; surface; produce; climate; institutions; religious bodies; chief towns.—Alabama: extent; surface; produce and climate; institutions; roads and canals; religious bodies; population; chief towns.—Mississippi: extent; surface; climate; roads and canals; institutions; religious bodies; population; chief towns.—Louisiana: extent; surface; climate; produce; rail-road; religious bodies; chief towns.....p. 458 to 472.

Additions to the English Edition.

Ramsay, the historian.—Mills's statistics of the state.—The Medical Society.—The Freemasons numerous, respectable, and charitable.—Literary and Philosophical Society.—Museum.—The institutions for educating youth.—Religious institutions.—Bookstores.—Periodicals, &c.....p. 461, 462.
Heat of the climate, from the pen of Governor Ellis.—The University of Alabama; the funds, buildings, &c.....p. 463 to 476.

CHAPTER VI.

THE TERRITORIES—ARKANSAS—FLORIDA—MICHIGAN—CHIPPEWAYAN DESERT—OREGON.

Arkansas: extent; surface; religious bodies; population; chief towns.—Florida: extent; surface; climate; produce; population; chief towns.—Michigan: extent; surface; climate; produce; trade; population; chief towns.—Chippewayan Desert.—Oregon.....p. 472 to 476.

BOOK VI.

Added to the English Edition.

METEOROLOGY.

A new theory of terrestrial magnetism.—An attempt to prove that caloric is the most subtle exhibition of matter; and is the same as electricity.—Caloric of fluids the cause of capillary attraction.—The circulation of sap in trees accounted for.—Caloric the cause of chemical affinities.—Oxidation and combustion promoted by moderate heat, and arrested by cold.—The doctrine that those bodies have the strongest attraction for caloric which contain the least of it.—The second part of the work is devoted to the theory of terrestrial magnetism, which is connected with the subject of climatology.—His 14 positions as the basis of his theory.—Dr. Franklin's observations.—Aerial condensation witnessed at New York, June 2, 1832.—Caloric the only cause of evaporation.—Errors in the science of electricity corrected.—The globe itself the grand laboratory of nature.—Theory of rain.—Trade winds.—The cause of hail storms—a descent of cold air from the upper regions.—A remarkable instance occurred at Cuba, May 24, 1809.—Oxygen a portion of all the varieties of rocks.—It is an error to suppose that there are two distinct electricities.—Sir Humphrey Davy's error on this subject.—Projectile forces.—Facts illustrating the positions assumed in regard to electricity.—The whole earth surrounded by an ocean of unseen and living fires.....p. 477 to 500

TOPOGRAPHY OF THE UNITED STATES.

BOOK I.

PHYSICAL GEOGRAPHY.

CHAPTER I.

GENERAL OUTLINE.—MOUNTAINS, RIVERS, &c.

THE territory of the United States has undergone many changes subsequently to the formation of the republic; all of them, however, tending to its enlargement. At the close of the war which established their independence, it was the wish of many, both among the French and the English, to limit them to the possession of the Atlantic coast, and "to coop them up," as some of their own writers have termed it, within the mountain chains which run nearly in a parallel direction with it, at a distance, for the most part, of several hundred miles. The endeavours of the American negotiators prevented such a result, and obtained the river Mississippi as the western boundary. The state, as thus constituted, was of great extent; but it was far from satisfying the wishes of this young nation. They first cast their eyes over the immense tract to the westward of the Mississippi, as far as the Pacific Ocean in one direction, and the Gulf of Mexico in another, a tract which was still claimed by France, and which was purchased by the United States, in the year 1803, for fifteen millions of dollars, or about three millions sterling. Not many years passed before the Floridas, which had been originally colonized by Spain, and were still under her feeble dominion, became an object of desire, and the cession of them was obtained with some difficulty, in the

year 1821. The details connected with the boundary line were settled by treaty at various periods, and with various powers; and a question relating to the British province of New Brunswick, has recently been referred to the decision of the king of the Netherlands, whose award is understood to be unacceptable to both parties, and may therefore be deemed inconclusive. The line of separation between the territories of Great Britain and the United States on the north, from the Chippewyan Mountains* to the Pacific Ocean, never has been determined.† The last reference to this region in diplomatic documents is the following:—"It is agreed that any country that may be claimed by either party on the north-west coast of America, westward of the Stony Mountains, shall, together with its harbours, bays, and creeks, and the navigation of all rivers within the same, be free and open, for the term of ten years from the date of the signature of the present convention, to the vessels, citizens, and subjects of the two powers; it being well understood that this agreement is not to be construed to the prejudice of any claim which either of the two high contracting parties may have to any part of the said country, nor shall it be taken to affect the claims of any other power or state to any part of the said country; the only object of the high contracting parties, in that respect, being to prevent disputes and differences among themselves." In the meantime, the best maps have outrun the slow progress of negotiation, and exhibit a

* The appellation which we shall uniformly give to what have commonly been called the *Rocky* or *Stony* Mountains.

† The Russian claim to this territory, which brought that empire

at one period into contact with the Americans, has been subsequently abandoned, and the respective limits settled by treaty with the British government.

line of demarcation, which is certainly not unnatural, and which may be proceeded upon for the purposes of the present description.

In its utmost reach, the territory of the United States extends from N. Lat. 25° , or $24^{\circ} 27'$, the southern extremity of Florida, to N. Lat. $54^{\circ} 40'$, the extreme north of the district of Oregon; and from the 67th to the 125th degree of west longitude from Greenwich.* It is bounded on the north by British America; on the west by the Pacific Ocean to the 42d degree of latitude; on the south by the republic of Mexico and the Mexican Gulf, and on the east by the Atlantic Ocean. This may well be called an immense region. Its mean length from east to west is 2,500 miles, and its mean breadth from north to south 830. Its line of boundary extends, according to Darby, to 9,425 miles, of which 2,525 are sea coast; and its area comprehends 2,257,374 square miles, exceeding by a small fraction one twentieth part of the land surface of the earth.

The great features of this ample territory are few and simple. Contemplating its extent from east to west, we perceive on either side the Atlantic or Pacific Ocean respectively; on either side, also, are chains of mountains, on the east the Appalachian, on the west the Chippewayan Mountains, traversing the whole extent of the country, at a considerable distance from the coast, but in a direction nearly parallel with it. The effect of these mountain chains is to cut off a strip of land next the sea on either side, and to throw the whole of the intermediate country into the form of an immense inland valley. The territory of the United States is thus naturally divided into three great sections; that of the Atlantic Slope; that within the great central valley of North America; and, thirdly, a portion extending from the Chippewayan Mountains towards the Pacific Ocean.

The first of these sections we have called the Atlantic Slope, since for the most part it consists of lands gradually sloping from the Appalachian Mountains to the Atlantic Ocean. There are, however, two exceptions to this description; the one in the peninsula of Florida, which is flat and entirely separate from the mountain chains, and the other in the New England states, in which the mountains constitute the sea coast, without any intermediate lands. Neither in strictness can it be said that the mountain ridges constitute the western boundary of the Atlantic Slope itself; since the rivers, which of course indi-

cate the descent of the country most correctly, do not uniformly rise in the mountains, but in many cases especially in the north, rise in the table land beyond them, and burst through the mountains, in order to find their way to the Atlantic Ocean. The high ground, therefore, which really defines the western edge of this slope, must be traced by the river sources, and will be found to form an inflected line, ranging obliquely over the Appalachian system.

The ocean border of the Atlantic Slope is formed into three extensive bays. Having Capes Hatteras and Florida as the extremes of its chord, and the fine estuaries of St. John's, St. Mary's, Alatomaha, with many other rivers, pouring into it, stretches a bay swept by that great ocean river, the Gulf Stream. The coast of this bay is uniformly low and sandy, with small islands, extending generally parallel to the opposing shore of the continent. The rivers are comparatively shallow at or near their efflux into the ocean. If we consider the South-western Bay as commencing with the northern outlet of the Bahama Channel, the length of its chord will be about six hundred miles, with a depth from that chord to the mouth of the Alatomaha of about two hundred miles. The Gulf Stream in its passage north-east flows almost exactly along the chord of this bay, and forms in its inner curvature an immense whirlpool.

Cape Hatteras forms a most distinguishing landmark on the oceanic border of the United States. Without an elevation much above the waves, which beat with untameable rage against its rocky front, this stormy promontory projects into the Atlantic Ocean, almost exactly mid-distance between Florida Point and Passamaquoddy. Sweeping inwards from this cape of tempests, and forming a section of a very elongated ellipse, the Middle Bay of the United States extends about five hundred and fifty miles to the eastern salient angle of Massachusetts, with a depth from its chord to New York harbour of one hundred and fifty miles. The coast of the Middle Bay, like that of the South-west, is generally low and sandy; but its rivers and minor bays assume a very different character. All the rivers of the South-western Bay enter the Atlantic Ocean by narrow and very shallow outlets, neither of them, except the St. Mary's, admitting the entrance of large vessels; but with the Neuse and the Pamlico, entering into Pamlico Sound directly west from Cape Hatteras, commences a new order of rivers. Pamlico Sound is followed by that of Albemarle, receiving Roanoke and Chowan Rivers, which is again succeeded by that immense recipient, the Chesapeake Bay, and that again by the wide estuary of the Delaware, and next, the long and

* Reckoned from the meridian of Washington, the United States extend from 10° east to 48° west longitude.



singular tide river or bay of the Hudson. At the efflux of the Hudson the Atlantic waves almost reach the base of the Appalachian mountains, but are again repelled by the sandy border of Long Island, which, through a distance of one hundred and sixteen miles, shelters an inland gulf, differing in character from the other sounds or bays on the Atlantic Slope only in having two outlets into the ocean. The outer coast of Long Island may therefore be regarded as the continuation of that of the Atlantic, and what is called Long Island Sound as the recipient of the Houssatonick and Connecticut rivers. The beautiful and richly variegated bays of Narraganset and Buzzard close the fine indentings of the Middle Bay of the United States, which terminates with the sandy point of Malabar. Similarly to that of the South-west, the chord of the Middle Bay is very nearly the course of the Gulf Stream, though, in its advance to the north-east, that great current increases in width, but diminishes in rapidity.

Cape Cod, the eastern extremity of Massachusetts, is a promontory which constitutes another of those geographical limits on each side of which strong contrasts in natural phenomena present themselves. Here the coast curves rapidly inwards by an abrupt sweep to the south, thence west, gradually winding to the north-east, and finally to the south-east; enclosing on three sides a sheet of water in the form of a parallelogram, extending two hundred by one hundred and eighty miles. Into this north-eastern recipient are poured the rivers Charles, Merrimack, Piscataqua, Saco, Kennebeck, Penobscott, St. Croix or Passamaquoddy, St. John's, and it might be added, the Bay of Fundy. The shores of Cape Cod are low and sandy, but with it terminates the low and alluvial coast of the United States. The high land now approaches the ocean, and the bays and rivers of north-east Massachusetts, and those of New Hampshire and Maine, open to the ocean between bold and swelling hills. The harbours of this section of the United States are numerous, deep, and spacious, and the two extremes of the Atlantic Slope present a complete contrast in scenery and in commercial facility.

Along the Gulf of Mexico, in a line of 1100 miles, scarcely a hill of any perceptible elevation rises, to break the dull monotony of the coast. The rivers enter their recipient by narrow and shallow channels, and even the mighty Mississippi on no one bar has thirteen feet water. The best harbours are bays into which no great rivers are discharged.

Looking inland from the Atlantic Ocean and the Gulf of Mexico, one vast and very gently rising plain seems emerging from the waters. At first almost an

undeviating level, it is imperceptibly broken into hill and dale; the hills being first humble, but swelling into majesty as they approach the mountains. The long chains of the Appalachian system stretch from south-west to north-east. They are irregular, and plainly different from the hills, yet arranged, as a whole, with remarkable symmetry. They cross the line of the river sources, which singularly follows the deflections of the coast, at an angle of about 30 degrees. Touching the ocean in the New England states, they penetrate more and more deeply into the continent in their course to the south-westward. Taken under a comprehensive survey of its physiognomy, the Appalachian system comprises an undetermined number of chains, extending in collateral ranges; each chain is formed of ridges which interlock with each other, and are frequently cut by the rivers; the ridges extend in most instances in the same direction with the chain which they contribute to form; the chains differ very materially in relative elevation and continuity, and the whole system is, with a few exceptions, in a remarkable manner devoid of peaks. No unequivocal appearance of volcanic eruption has been anywhere detected. The elevation of the Appalachian mountains is by no means considerable, and that of the table land giving origin to the Atlantic rivers may be said to be very trifling: the former never exceeds 6000 feet, and rarely approaches that elevation; while the latter, at its highest point, which is near the Gulf of Mexico, does not exceed 1800 feet, and in the northern states is less than 500. The chasms by which the rivers penetrate this mountain system are not the least remarkable of its features. The most extraordinary is that occupied by the River Hudson, by means of which the tide flows for 160 miles through the very heart of the mountains, and pierces the entire mass. This glen is continued to the St. Lawrence, the northern part of it being occupied by Lakes George and Champlain, and an elevation of only 140 feet dividing them from the tide level in the Hudson.

A rocky obstruction giving occasion to a fall, is a general, and almost a uniform occurrence in all considerable rivers which flow into the Atlantic between New York and the Mississippi. It is found that a line passing through these falls in succession would very nearly observe the deflections of the coast, and it is believed that they are all occasioned by a ledge of rock passing continuously through the whole country connected with the mountains. In most instances the tide advances up to this rocky ledge, and within a short space above and below it the face of the country is strongly contrasted. Below the river falls

the aspect becomes more and more monotonous, until the whole sinks to a level scarcely more broken, in many places, than that of an ocean in a calm. The rivers, except from the tides, are without current, or flow gently; and marshes, overflowed by the tides and land floods, are extensive near the coast. Above the falls all is different, and not only to the mountain bases, but in their expansive valleys, the hills meet the traveller's eye in considerable elevation, round, bold, and swelling. The rivers wind through vales, rich, variegated, and gently undulating, and now, under the influence of cultivation, smiling in all the gayety of field, garden, orchard, and meadow. This fine hill tract spreads, if the expression may be used, round the Appalachian masses, and extends from the mouth of the St. Lawrence nearly to that of the Mississippi. It comprises the best peopled and best cultivated part of the north-eastern, middle, and southern states; and the largest and most wealthy cities of the republic have risen on its margin.

Let us now turn to the west, and examine the tract between the Chippewayan Mountains and the Pacific Ocean. The extent of coast here possessed by the United States is small in comparison with the Atlantic, being only about 600 miles; but the mountains are at a mean distance of 500 miles from the sea, giving to this region a much greater breadth than that of the Atlantic Slope. The Chippewayan Mountains appear to be altogether of a different character from the Appalachian. They are of a much greater altitude, some of them rising to the height of nearly 12,000 feet, and much more distinguished by conical peaks, and marks of volcanic agency. They are not broken through by the numerous rivers which rise in them, but constitute the dividing ridge of the respective waters. The rivers which flow towards the ocean do not, as on the eastern side, enter it in considerable numbers, indenting the coast with frequent estuaries; this being obstructed by a second, and as yet nameless, chain of hills running along the coast, and supposed to be a continuation of the range which constitutes the peninsula of California. The district of Oregon, therefore, (for such is its name,) is not properly a slope from the mountains to the sea, but a valley enclosed by two mountain ranges, the western being occasionally opened for the escape of the enclosed waters. Four principal rivers traverse this territory: the Multnomah, coming about 900 miles from the south; Lewis River, perhaps 1100 from the south-east; Clark's River, 1000 from the eastward; and the Columbia, an equal distance from the north. These rivers, among which it is difficult to determine the principal, unite at various distances

from the ocean, and flow into it under the general name of the Columbia, N. Lat. 46° . In relative height, the surface of the Oregon basin falls from the plateau of the Chippewayan, at least 3,370 feet, to the level of the Pacific Ocean, and down this rapid descent the rivers are precipitated over numerous falls and cataracts. The tide penetrates inland through the western system of mountains, following the windings of the stream upwards of one hundred miles, the bay at the mouth opening between Capes Adam on the south-east, and Disappointment on the north-west. The entrance, with about twenty-six feet water, runs easterly about twenty miles, and thence south-easterly to the mouth of Multnomah, sustaining thus far a depth of at least twenty feet. The face of the Oregon basin, as far as explored, is far from promising. Much of the country is broken by mountains, or stretches in naked plains, though some fine valleys, of confined extent, spread between the chains.

Between the Chippewayan and the Appalachian Mountains stretches an extensive tract, which, as a whole, may be called a valley, and, not improperly, the valley or basin of the Mississippi, as drained principally by that river and its confluent streams.

In looking at the upper or northern part of this region, we are immediately struck with the unparalleled series of lakes or rather inland seas, which empty themselves into the Atlantic by the river St. Lawrence. It will be proper, in the first place, to glance at this interesting tract, which may be described as the St. Lawrence Basin. This great basin is naturally subdivided into three unequal parts, which may be with propriety designated upper, lower, and middle. The higher basin, the bottom of which is occupied by Lake Superior, lies in form of a rhomb; its length from north-east and south-west is 300 miles, and its breadth from south-east to north-west is nearly equal. Its area is about 90,000 square miles, one third of which is contained in the lake. Into this reservoir are poured upwards of fifty rivers, none of which are of much importance. Though individually small, the quantity of water supplied collectively by the numerous confluent of Lake Superior must be very great, and it differs materially in different seasons of the year. The whole mass, composing a large river, is precipitated through the straits and down the falls of St. Mary. The surface of the lake is, by measurement, 641 feet above the Atlantic level. With a slight depression of twenty-three feet, the second or middle sub-basin of the St. Lawrence is spread below that of Lake Superior. The middle basin extends over a quadrangular area of at least 160,000 square miles, hav-

ing the three great central lakes of Michigan, Huron, and Erie, as its lower valleys. Lake Michigan is an immense chasm, at least 900 feet deep, and 270 miles long, by about fifty mean width. The confluent of both this and Huron, like those of Superior, are inconsiderable individually, but very numerous; and when swelled by spring rains and melted snows, they exert a sensible influence on the relative height of their recipients. The sides of the lakes, and, indeed, the whole peninsula of Michigan, present little elevation. Lake Huron is an expanded triangular body of water, second in mass and extent only to Lake Superior. Receiving the vast discharge of both Superior and Michigan into its north-western angle, Huron protrudes the accumulated waters from its southern extremity. A few detached islands lie scattered over the surface of Lake Superior, and a few of still more diminutive size checker the northern part of Michigan; but Huron is almost subdivided by a regular chain. A peninsula is projected into this lake from its south-east side, from which, in a direction south-west by west, and nearly parallel to the northern side of the lake, the Manitoulin islands follow entirely across the lake to about midway between the mouths of Michilimackinack and St. Mary's Straits. Between the Manitoulin group, and the northern shore of the lake, extends a strait of about 200 miles in length, with a mean width of about thirty miles, also much checkered with islands. The residue of Huron towards the Michigan coast sinks to an almost unfathomable depth; nine hundred or a thousand feet would be a moderate estimate. The prodigious depth of the three upper Canadian lakes is a very interesting phenomenon in physical geography. Though the surface of the two lowest of the three, Michigan and Huron, is 618 feet above the Atlantic level, their bottoms are nearly 300 feet below it. It is therefore probable that some parts of Lakes Michigan or Huron are the deepest chasms on the continental surface of the earth. Lake Erie constitutes the most southern section of the middle sub-basin of the St. Lawrence. It is elevated 565½ feet above the Atlantic surface, and consequently lies 52½ feet below the level of Michigan and Huron. It is 230 miles long, from south-west to north-east. The form is elliptical, but much elongated, the breadth but little exceeding fifty miles at the widest, and not averaging more than thirty-five. The bottom of Lake Erie appears to be composed of an alluvial deposit of sand and mud, resting on a secondary sandstone, the depth seldom exceeding 200 feet, and in few places being so much. In the course of the river from Lake Erie occur the cele-

brated and truly magnificent falls of Niagara, by which it descends into the lower sub-basin of the St. Lawrence, and expands into Lake Ontario. This lake is 334 feet lower than Erie, and a very marked change is perceptible in the natural physiognomy of the country. This portion of the St. Lawrence basin is composed of two very unequal inclined planes. That of the right, or south-east, about 750 miles in length, does not exceed a mean width of sixty miles; but that of the north-west extends over 900 miles in length, with a mean width of nearly 270, with an area of 287,000 square miles. Lake Ontario is the lower stage of an enormous chasm on the earth's surface. The rivers on every side pour into its bosom by rocky and precipitous channels; and not one is navigable to any considerable distance without interruption from rapids, or, in most instances, from direct falls. The north-east part of Ontario is a congeries of islands, which are continued down the St. Lawrence about fifty miles. This part of the river is from ten to two miles wide, without much current, and known by the local name of The Thousand Islands. The number actually amounts, if every naked little rock is taken into the list, to upwards of 1500. The peninsula of Prince Edward, and the small islets outside of Sackett's Harbour, are the higher eminences of this group, which, as extended into Lake Ontario, exceeds one hundred miles in length.

These magnificent lakes, which have justly been called the Canadian Sea, are deemed the most extensive repository of fresh-water upon the globe. They are so in consequence of their immense depth, however, and not of their surface, which is only 72,900 square miles, little more than half the superficial area of the Caspian Sea. The attempts that have been made to estimate the quantity of water contained in them are necessarily embarrassed with many difficulties. It appears, from the united testimony of every person who has made the necessary experiments, that Lakes Superior, Huron, and Michigan, are vast, and in some places unfathomable gulfs; that of all the great lakes, Erie is the most shallow, not exceeding a mean depth of 120 feet; and that Ontario varies from 450 to 534 feet. According to Darby, who takes a mean depth of 900 feet for the three upper lakes, the contents of the St. Lawrence basin may be computed at 1,547,011,792,360,000 cubic feet of water.* The amount is certainly stupendous. It would form a cubic column of nearly twenty-two miles each side; or, if spread

* Darby, p. 231.

round the earth equally on each side of the equator, at a depth of one foot, it would nearly cover the torrid zone, and would actually envelope the whole earth to upwards of three inches in depth. In positive mass, it may be assumed on very solid grounds, that the St. Lawrence basin contains more than one half of all the fresh water on this planet. The writer above quoted calculates the water discharged by the St. Lawrence at 1,672,704,000 cubic feet per hour.* In making its way to the ocean, the St. Lawrence, like the Hudson, penetrates an extensive mountain mass, frequent rapids alternating with lake-like expansions, and finally enters the sea, after a course very nearly parallel to the Atlantic coast. In its progress it receives from the United States the waters of Lake George and Lake Champlain, two fine sheets of water, occupying the northern part of the great glen by means of which the Hudson pierces the mountain chains. The length of Lake Champlain is 109 miles, and its breadth varies from half a mile to twelve miles. Its depth, like that of the higher lakes of the St. Lawrence, is in many places prodigious. It is in reality the lower plateau of a deep vale.

As a basin of inland commerce, it may be truly asserted that the St. Lawrence stands alone on the globe. In its main channel the ocean tides penetrate 432 miles, or about midway between Quebec and Montreal. Above tide water to Ogdensburg, the channel is much impeded by shoals and rapids, but in no place actually impassable with vessels, either ascending or descending. Ships of the line of the first class are navigated to Quebec, and vessels of 600 tons to Montreal, upwards of 500 miles from the Gulf of St. Lawrence. Again passing from the river we merge into an inland sea. At the lower extremity of the first expanse of that central sea, Lake Ontario, two ports present their deep recesses to the most unwieldy vessels of war; these are Kingston and Sackett's Harbour. Beyond those spacious havens the harbours of the Canadian Sea are generally shallow, but no region of the earth presents such varied, contrasted, and peculiar scenery. Even the majestic Niagara is but the principal object of interest on this expanded canvass. Above the falls of Niagara it is generally only in the rivers that safe anchorage can be found, and in many parts, for great distances, no kind of shelter is offered by the lake shores. Round all the lakes, ridges of sand and shingle are traced, which indicate various subsidences of their level, to the depth, in Lake Ontario, in

which the occurrence is most strongly marked, of 160 feet.

In the remainder of the central valley of the United States, of which the St. Lawrence basin constitutes, to a great extent, the northern boundary, it is a prominent and obvious feature that the whole of it is drained by one set or system of rivers. Many of them come from very remote distances, and are themselves of great magnitude; but instead of finding their own way to the sea, they mingle their waters in a common receptacle, and enter the Gulf of Mexico by the mouths of the Mississippi. We have already seen that no considerable rivers run into the lakes of the St. Lawrence; and this may prepare us for the fact, which is obvious upon the maps, that many of the streams which pour themselves into the Mississippi arise very near to the lakes themselves. The Ohio, for example, rises within five miles of Lake Erie, and there are many similar cases. But we should scarcely have expected that rivers which have a course of 3000 miles to run, would rise from grounds elevated only a few hundred feet above the level of the ocean. Yet such is the remarkable fact. No mountains, nor grounds of considerable elevation, divide the tributaries of the lakes from those of the Mississippi valley. On the contrary, the waters of Lake Michigan are so nearly on a level with those of the River Illinois, which flows into the Mississippi, that, in flood seasons, their waters not only mingle, but boats of seventy or eighty tons are navigated from the one into the other. The preceding remark may be further extended, and may be applied to the immense inflected line, of upwards of 2000 miles, from the sources of the Susquehanna, Genesee, and Allegany, to those of Saskawin of Hudson's Bay, Maria's River of Missouri, and Clark's River of Columbia. The latter line may be considered as that by which the slope of the Mississippi basin declines from that of the St. Lawrence and Hudson basins. It is entirely destitute of mountains. We may, therefore, consider the basin of the Mississippi as the southern declination of the great central valley of North America; and as limited on the east by the table land, and not by the actual chains of the Appalachian system, and on the west, by the chains of the Chippewayan.

This central valley may be divided into four parts. First, the portion between the lakes and the Appalachian Mountains; this is traversed by the Ohio, and its numerous confluent. Second, the portion between the lakes and the Missouri; this is traversed by the Mississippi proper. Third, the portion occupied by the Missouri itself, including the course of

* Darby, p. 233.



VIEW OF MOUNTAIN

the river Platte. Fourth, the valley of the Lower Mississippi, with the Arkansas and Red rivers.

The Ohio valley is subdivided by the river into two unequal sections, leaving on the right or N. W. side, 80,000, and on the left or S. E. side, 116,000 square miles. The Ohio River flows in a deep ravine, and forms a common recipient for the water poured down from both slopes. The length of the ravine, in a direct line from the city of Pittsburgh to the Mississippi River, is 548 miles, but by the meanders of the stream 948 miles. "The hills," says Mr. A. Bourne,* "are generally found near rivers or large creeks, and parallel to them on each side, having between them the alluvial valley, through which the stream meanders, usually near the middle, but sometimes washing the foot of either hill. Perhaps the best idea of the topography of this region may be obtained by conceiving it to be one vast elevated plain, near the centre of which the streams rise, and in their course wearing down a bed or valley, whose depth is in proportion to their size, or the solidity of the earth over which they flow. So that our hills, with some few exceptions, are nothing more or less than cliffs or banks, made by the action of the streams: and although these cliffs or banks on the rivers or larger creeks, approach the size of mountains, yet their tops are generally level, like the remains of the ancient plain." The confluent of the Ohio which flow from the Appalachian Mountains are, from their sources, precipitous torrents, and pursue their courses in deep channels; whilst those streams which derive their fountains from the north-western slope, although sluggish towards their sources, gain velocity as they approach the Ohio. In its natural state, the valley of Ohio was for the most part covered with a dense forest, but the central plain presents an exception. As far east as the sources of the Muskingum commenced open savannahs, covered with grass and devoid of timber. Like the plain itself, those savannahs expand to the westward, and on the Illinois open into immense natural meadows, generally known under the denomination of prairies. The Ohio, from Pittsburgh to the Mississippi, a course of nearly a thousand miles, falls only about 400 feet, or about five inches in a mile. This river, and its principal branch, the Alleghany, are in a striking manner gentle as respects current; and from Hamilton, in the state of New York, to the Mississippi, over a distance of 1158 miles, following the streams, at a moderately high flood it meets, excepting the rapids at Louisville, with not a single serious natural impediment. The

Monongahela, more impetuous than the Alleghany, is yet navigable, without falls or rapids, by both branches, far into Virginia. On the north-west side of the valley the rivers are extremely rapid. Rising on a table land from 300 to 1000 feet above their mouths, and in no instance having a direct course of 300 miles, the streams, though falling gradually, are almost torrents. The Big Beaver, Muskingum, and Hockhocking, have direct falls; but the Sciota, Miami, and Wabash, though rapid, have neither falls nor cataracts to impede navigation.

The Ohio valley may be regarded as a great plain inclining from the Appalachian system to the N. W., obliquely and deeply cut by the Ohio and its numerous confluent, into chasms from an elevation of 460 feet to nearly the level of the streams. In the higher part of the valley, when on the rivers, the banks, with the exception of comparatively narrow flats near the margins, rise by bold acclivities which have a mountainous aspect. This boldness of outline imperceptibly softens in descending the Ohio, and on approaching the Mississippi an extent of level woodland bounds the horizon. Ascending the rivers of the south-east slope, the scenery becomes more and more rugged, until it terminates in the ridges of the Appalachian chains: on the contrary, if the rivers of the north-west slope are followed, we find the landscape broken and varied near the Ohio, but around their sources flat and monotonous. In our survey of the Ohio valley, we have reached the verge of those wide spread prairies, savannahs, or steppes, which, more westward, dilate until forests dwindle to mere clumps or narrow lines of trees along the streams, while in the intermediate spaces extend grassy wastes, which seem to lengthen as the traveller speeds over their tedious surface. In its natural state, an almost unbroken forest spreads over and around the Appalachian system of mountains, reaching to the Atlantic Ocean, Gulf of Mexico, and stretching over the St Lawrence towards Hudson's Bay, and westward beyond the Mississippi and Ohio. This is, perhaps, the most extensive continuous forest which exists on earth. The human hand has, indeed, marked its surface by opening a few spots, but the far greater part remains the empire of trees. Beyond this wooded region, to the west, follows another, far more extensive, but of very different character. The second or grassy tract is not separated from the wooded by any definite limit; in passing from one to the other, the features are so blended as to render the transition imperceptible. In general, the prairie region is less hilly, mountainous, or rocky, than that of the forest; but exceptions in both cases are frequent. Plains of

* Darby p. 298.

great extent do exist in the latter, while mountains of great elevation, mass, and extent, checker the former.

The Mississippi rises in Turtle Lake and Lake Lebeish, about N. Lat. $47^{\circ} 47'$, and pursues a course of about 1200 miles, previously to its junction with the Missouri. The Ohio, in its north-eastern extreme sources, we have found issuing from an elevated, mountainous, and highly variegated country; whilst those of the Mississippi, on the contrary, ooze from an immense marshy plain, in great part devoid of timber. The space intervening between Lake Superior and the great inflection of the Missouri and the Mandan villages, rises by a rapid acclivity to nearly 700 feet above the lake, and thence spreads towards the Missouri in a level, with a very gentle descent. In this plain the Mississippi rises. It is a circumstance peculiar to this river, that the physiognomy of nature around its head bears so strong resemblance to that of its estuary. A difference of nineteen degrees of latitude precludes much similarity in vegetable or stationary animal production; but according to Mr. Schoolcraft, who visited the sources in the month of July, the migratory water fowl found there at that time of the year are very nearly the same which flock in countless millions over the delta, in December, January, February, and March. "It is also deserving of remark," says Mr. Schoolcraft, "that its sources lie in a region of almost continual winter, while it enters the ocean under the latitude of perpetual verdure."

On a view of the particular valley of the Mississippi, its general monotony first strikes the eye. No chains or groups of mountains, or elevated ranges of hills, rise to vary the perspective. Over so wide a space as 180,000 square miles, some solitary elevations indeed exist, which, for want of contrast, are dignified by the name of mountains; but few continuous tracts of equal extent afford so little diversity of surface. The upper part of the Mississippi itself is traversed by numerous falls of inconsiderable perpendicular descent; many places along the banks are high, broken, and precipitous; but taken as a whole, there is a sameness strikingly in contrast with the ever varying landscapes along the higher part of the Ohio, and upon the Appalachian streams.

The Missouri rises in a part of the great Chippeawan mountain system. As viewed from the course of this river, the mountains rise abruptly out of the plains, which lie extended at their base, and tower into peaks of great height, which renders them visible at the distance of more than one hundred miles eastward from their base. They consist of ridges, knobs, and peaks, variously disposed, among which are interspersed many broad and fertile val-

leys. The more elevated parts of the mountains are covered with perpetual snows, which contribute to give them a luminous, and, at a great distance, even a brilliant appearance, whence they have derived the name of Shining Mountains. They are clad in a scattering growth of scrubby pines, oak, cedar, and furze, and exhibit a very rugged and broken aspect. The Missouri rises far within the bosom of the mountains, and is divided by a single ridge from the waters of the Columbia, which terminate in the Pacific Ocean. In its early course it flows through small but beautiful and fertile valleys, deeply embosomed amidst the surrounding heights, and forms a variety of islands in its progress, till at length it issues from these verdant recesses by a rocky pass, which has not unaptly been called by Lewis and Clarke, the Gates of the Rocky Mountains. "The rocks,"* say these enterprising travellers, "approach the river on both sides, forming a most sublime and extraordinary spectacle. For five and three quarter miles these rocks rise perpendicularly from the water's edge to the height of nearly 1200 feet. Nothing can be imagined more tremendous than the frowning darkness of these rocks, which project over the river, and menace us with destruction. The river, of three hundred and fifty yards in width, seems to have forced its channel down this solid mass; but so reluctantly has it given away, that, during the whole distance, the water is very deep, even at the edges, and for the first three miles there is not a spot, except one of a few yards, in which a man could stand between the water and the towering perpendicular of the mountain; the convulsion of the passage must have been terrible, since at its outlet there are vast columns of rock torn from the mountain, which are strewed on both sides of the river, the trophies as it were of the victory. Several fine springs burst out from the chasms of the rock, and contribute to increase the river, which has now a strong current, but very fortunately we were able to overcome it with our oars, since it would be impossible to use either the cord or the pole. We were obliged to go on some time after dark, not being able to find a spot large enough to encamp on; but at length, about two miles above a small island in the middle of the river, we met with a spot on the left side, where we procured plenty of lightwood and pitchpine. This extraordinary range of rocks we called the Gates of the Rocky Mountains." The stream called by pre-eminence Missouri, is not the main branch, if the documents hitherto published

* Lewis and Clarke's Travels up the Missouri, chap. xii.

are correct; the Yellow Stone River appears to be longer than its rival above their junction, and to receive larger and longer confluent. It rises in the Chippewayan mountains, more to the southward. At the junction of the Yellow Stone and the Missouri, the river, estimated by either branch, has flowed upwards of a thousand miles, and it is little if any less, either in width or depth, than it is at its junction with the Mississippi. A few miles below the influx of the Yellow Stone, the Missouri has reached its utmost northern bend, in N. Lat. $48^{\circ} 20'$; and curves by a regular sweep of two hundred miles to the Mandan villages. The Platte and Kansas are two great confluent of the Missouri rising in the same mountains, and flowing generally to the eastward, the former 700, and the latter 600 miles. The Platte derives its name from the circumstance of its being broad and shoal; its average width being about twelve hundred yards, exclusive of the islands it embosoms; and its depth, in a moderate stage of water, so inconsiderable, that it is fordable almost every where. The river in several places expands to the width of many miles, embosoming numerous islands, some of which are broad and considerably extensive, and all of them covered with a growth of cotton wood and willows. These are the only woodlands that make their appearance along the river, and in travelling westward these become less numerous and extensive, till at length they entirely disappear. The Platte is seldom navigable, except for skin canoes, requiring but a small depth of water, and for these only when a freshet prevails in the river. No attempts have ever been made to ascend the river in canoes for any great distance, the prevalence of shoals, and the rapidity of the current, discouraging such an undertaking. The bed of the Platte is seldom depressed more than six or eight feet below the surface of the bottoms, and in many places even less, and spreads to such a width that the highest floods pass off without inundating the bottoms, except in their lowest parts, the rise of the water on such occasions being no more than five or six feet. The Kansas is navigable only in high freshets for boats of burden, and on such occasions for not more than one hundred and fifty or two hundred miles, the navigation being obstructed by shoals. The character of this river and its several branches is similar to that of the Platte and its tributaries. After a direct course of 1870 miles, and a meandering one of 3000, the Missouri falls into the Mississippi. The greatest length of the valley of the Missouri, from the mouth of that stream to the head of Maria's River, is 1200 miles; its greatest breadth, from the

sources of the Platte to a short distance south-east; from the Mandan villages, is 700 miles; with an area of 523,000 square miles, equal to 334,000,000 of statute acres. Three remarkable features exist in it; first, the turbid character of the water; second, the very unequal volumes of the right and left confluent; and third, the immense excess of the open prairies over the river lines of forest. In the direction of the western rivers, the inclined plane of the Missouri extends 800 miles from the Chippewayan mountains, and rather more than that distance from south to north, from the southern branches of the Kansas to the extreme heads of the northern confluent of the valley. Ascending from the lower verge of this widely extended plain, wood becomes more and more scarce, until one naked surface spreads on all sides. Even the ridges and chains of the mountains partake of these traits of desolation. The traveller in those parts who has read the descriptions of central Asia by Tooke or Pallas will feel, on the higher branches of the Missouri, a resemblance at once striking and appalling. He will regret how much of the earth's surface is doomed to irremediable silence; and, if near the Chippewayan heights in winter, he will acknowledge that the utmost intensity of frost in Siberia and Mongolia has its full counterpart in North America, on similar if not on lower latitudes. But of all the characteristics which distinguish the Missouri and its confluent, the few direct falls, or even rapids, is certainly the most remarkable. Between Dearborn's and Maria's rivers the stream leaves the Chippewayan range by rolling over ledges of rock for a distance of eighteen miles, after which this overwhelming mass of water, though every where flowing with great rapidity, nowhere swells into a lake, or rolls over a single cataract, in a distance of at least 3500 miles to the Gulf of Mexico. If therefore the Amazon is excepted, the Missouri and its continuation, the Mississippi, afford the most extended uninterrupted line of river navigation which has ever been discovered.

After being joined by the Missouri, the Mississippi makes a direct course of 820, or an indirect course of 1265 miles to the Gulf of Mexico. In no circumstance is the physical geography of the United States more remarkable, than in the extreme inequality of the two opposing planes down which are poured the confluent of the Mississippi below the influx of the Ohio. The western inclined plane, falling from the Chippewayan mountains, sweeps over upwards of eight hundred miles, whilst the eastern, sloping from the Appalachian, has not a mean width of one hundred miles. The rivers which drain the two slopes

are, in respective length, proportionate to the extent of their planes of descent. Whilst Red River exceeds a comparative course of 800 miles, the Arkansas of 1000, and White River of 400, the longest stream from the opposite slope falls short of 200 miles. The alluvion brought down by such volumes of water as those of White, Arkansas, and Red rivers, explains satisfactorily the reason why the Mississippi infringes so often on the eastern, and nowhere below the Ohio touches the western bluffs. The lower valley of the Mississippi is the most variegated section of the United States. Every form of landscape, every trait of natural physiognomy, and an exhaustless quantity, with an illimitable specific diversity, of vegetable and metallic productions, are found upon this extensive region. It is flanked on the east by a dense forest, and on the west by the naked ridges and spines of the Chippewayan mountains; while the deep entangled woods of the Mississippi stand in striking relief against the expansive prairies of the Arkansas and Red rivers.

The principal confluent of the lower Mississippi is the Arkansas, which is longer, and drains more surface, than either the Mississippi proper, the Platte, or the Ohio. It rises in the Chippewayan Mountains, and has a direct course of 1400, and an indirect course of 2000 miles. This great river is navigable about 600 miles; but issuing from an elevated and mountainous region, its main volume and numerous branches are much impeded by shoals and cataracts; below the mouth of Canadian Fork, however, though passing through a minor chain of mountains, the Arkansas rolls its stream of about 600 yards wide, with great depth, to the Mississippi. Next in volume and length of course to the Arkansas is Red River, which, like its rival, flows from hidden fountains in the mountains of Santa Fe. By a direct course this stream flows over about 1000, but by its meanders it exceeds in length 1500 miles. Both the Arkansas and Red rivers have their periodical annual swell, and enter their recipient in seasons of flood with immense volumes, which contribute largely to that enormous mass of water which every spring flows over Louisiana into the Gulf of Mexico. Impregnated by saline particles, and coloured by ochreous earth, the waters of these two rivers are at once brackish and nauseous to the taste, particularly near their mouths; that of Red River is so much so, that at Natchitoches, at low water, it cannot be used for culinary purposes.

The Mississippi makes its way to the sea through a tract of low country, consisting of forest, of prairie, and of marsh land. By its immense deposits of

earthy matter, it has formed in the course of ages an extensive delta, distinguished from those of all other rivers by the protrusion of a cape, or head-land, into the sea. This peculiarity arises from its having but one principal course through the delta itself, so that the debris continually brought down is always driven forward in one direction. The cape projects at present thirty miles into the Mexican Gulf, and has extended itself twelve or thirteen miles since the colonization of the country. The river has three main outlets, all of them shallow; the two deepest of them have only twelve feet water on the bar at ordinary tides. The shallow water, however, is only on the bar. At New Orleans the depth of the Mississippi is one hundred and sixty-eight feet.

Having taken this general view of the Mississippi, we may for a moment compare it with the other great river with which it is so nearly connected. Rising from the same vast table land, and having such an extended line of interlocking sources, it is worthy of remark, that no two rivers on earth so essentially differ in their general features, as do the Mississippi and the St. Lawrence. The former is turbid in many places, even to muddiness; the waters of the latter, and of its lakes, are highly limpid. The channel of one river is checkered with innumerable lakes, some of which are of immense extent, whilst in the other no lakes of any note occur. Annually the Mississippi swells and overleaps its bed, inundating the adjacent shores; a casual rise of three feet once or twice in any given fifty years is considered a great elevation of the waters of the St. Lawrence. The Mississippi, flowing from north to south, passes through a great variety of climes, whilst its rival, winding from its source in a south-east direction to nearly N. Lat. 41 turns gradually to the north-east, and again flows into its original climate of ice and snow. The Mississippi, before its final discharge into the Gulf of Mexico, divides itself into a number of channels having their separate egress; the St. Lawrence imperceptibly expands to a wide bay, which ultimately opens into the gulf of the same name. The banks of the Mississippi, particularly near the mouth, present a level scarcely rising above the highest spring floods of that stream; those of the St. Lawrence generally slope from the river margin by an elegant acclivity and when cleared from timber, have the aspect of a most delightful basin. Much of the surface within the Mississippi valley is occupied by open grassy plains, where few shrubs or trees break the monotony of the landscape; nearly the whole of the St. Lawrence basin, in a state of nature, is covered with a continuous and almost impervious forest. Such are the

leading and contrasted features of these two great North American rivers.

The spring floods to which the Mississippi is subject are remarkable for their long and steady continuance; a circumstance highly favourable to inland navigation. Considering the immense extent and the incalculable number of the rivers implicated, this fact has been considered anomalous; but without just cause. It is obvious, on a glance at the different regions from whence the waters are drawn, that the rivers must be high at different periods of the year. It is evident also, that, in the breaking up of winter, the water of the same valley is drawn from its recesses gradually; more particularly when, as in the case of the Mississippi, the river flows from the poles towards the equator. It is a general fact that such rivers are never so destructive in their inundations as those whose courses are in a different direction. Red River, the most southern, is also the first of the great branches of the Mississippi which discharges its waters on the delta, and it is followed by the Arkansas. It is remarkable that the Ohio and the Arkansas, remote as they are from each other, are the two streams of the whole basin which most uniformly emit their flood at the same time; and they are the streams, which, with some addition from Mississippi proper, give the highest and most durable flood to the delta. The Mississippi proper flowing so nearly north and south, spring thaws in it commence near the mouth, and retrograde slowly towards the source, and consequently the discharge is gradual; similar remarks apply to the Ohio and the Arkansas; so that the duration of the flood season is thus lengthened, while the quantity of water in a given time is moderated. In common years, Red River flows out in February or early in March, but occasionally it continues high from December until late in the ensuing spring; the great flood from the Arkansas, the Ohio, and the Mississippi proper, commences generally early in March, and attains its full height about the middle of June; abating from the latter period, it has greatly subsided by the end of July or the beginning of August, when the retarded overflow of the Missouri arrives to complete the annual inundation.

The importance of this inundation may be estimated from the following view of the navigable character of the principal rivers in their ordinary state. The navigation of the Mississippi has fewer obstructions between Natchez and its mouth than above this part of the river, having so great a depth of water that snags, bars, &c. are sunk below the reach of any kind of water-craft employed upon it. From Natchez upward to its confluence with the

Missouri, the river presents impediments that become more and more numerous and difficult to pass; although still the main channel, though intricate in many places, affords a sufficient depth of water in all stages for boats of five or six feet draft to ascend to the mouth of the Ohio. From this point to the Missouri, a distance of more than two hundred and twenty miles, the navigation is partially obstructed, during a very low state of the water, by shoals, so that it is navigable only for boats of moderate burden, requiring but about three feet of water. At the distance of about thirty miles above the mouth of the Ohio there are two rocky bars extending across the Mississippi, called the Big and Little Chains, which, in the deepest channel across them, afford no more than five or six feet of water when the river is low, and occasion a great rapidity of current. The obstructions to the navigation of the Missouri, although they are of the same character with those of the Mississippi, are far more numerous and formidable than those of the latter; the channel is rendered exceedingly intricate by means of sand-bars and islands, and the navigation in many places is very hazardous on account of the multiplicity of rafts, snags, sand-bars, &c. with which the channel is beset. No part of the river is exempt from these obstructions for any considerable distance, particularly when the water is low. During the flood there is a sufficient depth to admit boats of almost any burthen; but during the residue of the year it can hardly be called navigable, except for boats drawing no more than twenty-five or thirty inches. The obstructions to the navigation of the Ohio are sand-bars, some few rafts and snags, and rapids, to which the intricacy of its channel in several places may be added. During a middle and high state of water the obstructions entirely disappear, and an accelerated current is the only difficulty to be encountered; but during the rest of the year, when there is no freshet, boats of inconsiderable burthen meet with numerous obstructions in their progress from the lowness of the water, and in many places no channel can be found of sufficient depth to admit their passage. At the distance of about seventeen miles from its mouth is the first serious obstruction to its navigation, consisting of a lime-stone bar extending across the river, denominated the Big Chain, and three miles above is another of a similar description. The range of rocks, of which these appear to be a portion, seems to extend across the point of land situated between the Ohio and the Mississippi, presenting itself again on the latter, at the Big and Little Chains before mentioned. The

falls of the Ohio at Louisville are impassable for boats of burden, except in the higher states of the water. Le Turt's Falls, and numerous other rapids, denominated ripples, are also impassable for boats of heavy burden, when the river is at its lowest stages. In this state the river is fordable in numberless places.*

Connected with the general inundation is the very unfounded, but general opinion, that the Mississippi river can, and does occasionally, change its bed, and that it flows on a comparative ridge. On the contrary, the bed of the Mississippi, like that of all other rivers, is the lowest depression of the country through which it flows. As high as the efflux of La Fourche the stream is one hundred and thirty feet deep at low water, and, in a similar state, it is seventy-five or eighty at Natchez. At New Orleans the depth exceeds 160 feet. From the immediate margin of this great mass of water, indeed, the country falls by a very slow depression; but the bottom of the deepest lakes, Pontchartrain, Maurepas, Quacha, Chetimaches, and others, varies only from four or five to eighteen or twenty feet below the general level of the delta, leaving the bottom of the Mississippi upwards of 100 feet below that of any lake of Louisiana, except those formed by the river itself, in the following manner: The sweeping bends of the Mississippi cause the volume of its water to recurve upon itself, till by the double abrasion on its opposite side, a neck or isthmus is cut through, and thus far a new channel is formed, the ancient bend assuming the aspect of a lake, though still attesting its origin by its great depth, as well as its proximity and perfect resemblance to the bends of the parent stream. Of the latter species of lakes, *Fausse Riviere*, *Homo chitta*, and *Yazoo*, were produced within the range of history; those of *Concordia*, *St. John's*, *St. Joseph's*, *Providence*, and *Grand Lake*, were found in their existing state when Louisiana was colonized by the French. With the exceptions stated, the Mississippi can no more recede from its channel than could the Hudson, the Delaware, or the Susquehanna; the barriers which confine the latter to their channels are more prominent, but not less irremovable or impenetrable, than is the extended alluvion which spreads from the former.

Though we have described the whole of the Mississippi basin as a valley, with reference to the two mountain chains by which it is enclosed, there are comprehended in it not only undulations of hilly country, but two distinct, though subordinate, mountain

ranges. The most considerable of these is called the Maserne, or Ozark mountains. These mountains extend from the sources of the Rio Colorado of Texas on the south-west, to the confluence of the Mississippi and the Missouri on the north-east, and are continued in a low range from this point towards Lake Superior. They are widest in the south-west, and in that quarter they mingle with some low tracts, extending from near the Gulf of Mexico to the base of the eastern extremity of the Rocky Mountains. This range consists of low ridges, irregular in direction, rarely rising to an elevation of more than 1500 or 2000 feet. The mountainous country commences immediately west of the Mississippi bottoms, and extends westwardly about 400 miles. This section, with the exception of the river bottoms, and tracts of valley land scattered in various directions throughout the whole, is extremely hilly, broken, and mountainous, the hills and mountains rising from five to 1500 feet above the water-level of the country in which they are situated. They are exceedingly numerous, and are divided into a multiplicity of knobs and peaks, having rounded summits, and presenting perpendicular cliffs and abrupt precipices of sandstone. Their surfaces generally are covered with rocks of this description, or flinty fragments strewed in profusion upon them. The growth upon them is, almost exclusively, pitch pine, cedar, scrubby oaks, hickory, haw, and bramble; the poverty of the soil in some instances, and the scarcity of it in others, excluding the more luxuriant vegetable productions common to the more level country in their vicinity. These mountains are penetrated by White and Red Rivers and the Arkansas. The other range is called the Black Mountains, or rather hills, and is so placed as to occupy the northern bend of the Missouri, between that river and the Yellow Stone. These are of still lower elevation than the Ozarks, and of a different structure, though likewise perfectly distinct from the general character of the valley. They appear to extend from the bend of the Missouri to the river Platte, upwards of 400 miles, by about seventy or eighty in breadth. This hilly region is traversed by the Little Missouri river, running north-east into the Missouri at its northern bend, while it furnishes all the western confluent to that vast recipient, after its turn to the southward, so low as the River Platte.

The brief notice which our author has given of the physical aspect of this important country, demands an augmentation. Much might be added from the observations of several distinguished travellers of a

* Report of Major Long, in James's Account of the Expedition to the Rocky Mountains, vol. iii.

recent date, particularly Mr. Flint, who has given us a number of facts touching the valley of the Mississippi, in his works, to which the reader is referred. In a paper, little known, entitled, *Observations on certain Phenomena of the Great Lakes of America*, drawn up by the late governor of New York, Dewitt Clinton, and published in the *Transactions of the New York Literary and Philosophical Society*, vol. ii. part 1, some curious speculations may be found, and as they come recommended both by their novelty, and by the distinguished character of the author, they are deemed worthy of insertion, as a suitable termination of this chapter. Phenomena similar to those mentioned by Governor Clinton have been noticed as occurring in the waters of other inland seas.

"It has been until within a few years generally understood that there are no tides in the great lakes of America; and that the Mediterranean, Black, Caspian, and Baltic seas, and other great waters of the old world, are also exempt from their influence. More accurate observation has however indicated that this opinion is in some respects erroneous, and it is now considered doubtful whether it is not altogether so. It is confidently said that there are tides in the Mediterranean. At Toulon, three hours and fifteen minutes after the moon has passed its meridian, the tide rises one foot; and in the highest spring tides, augmented by the concurrence of other causes, it swells as high as two feet.* The Lake of Geneva and the Lake of Constance are subject to an occasional rising and falling of their waters three or four feet, several times in succession, by a sort of oscillating motion, which phenomenon is denominated *seiches*.† There are certain appearances connected with our lakes that resemble the operation of tides, and there are others of a character entirely dissimilar. As the western lakes contain the greatest collections of fresh water in the world, all the phenomena connected with them are deeply interesting in relation to geography, agriculture, trade, and natural science: I shall therefore devote this memoir to this subject.

"1. In our lakes there is, apparent to every observer, a sort of flux and reflux, which we would naturally attribute to the wind, and might therefore pass it over without particular attention. But a more discriminating view has resulted in a conviction with many accurate and distinguishing observers, that the peculiar motion of the waters is entirely independent of the winds; that it occurs within stated periods; that it is not subject to the irregularities of occasional

or accidental causes, but that it depends for its existence upon a power operating with unceasing vigour, and with unintermitted regularity, at the same place, although varying as to the quantum of its influence at other places. On the other hand, it is supposed by some that these appearances are occasional and irregular, and do not result from uniform causes. I shall now refer to some prominent authorities on this subject.

"La Hontan is the first writer who touches on this phenomenon.‡ 'On the 29th of May, 1689, we came,' said he, 'to a little deep sort of a river, which disembogues at a place where the water of the lake (Michigan) swells three feet high in twelve hours, and decreases as much in the same compass of time. Our tarrying there three or four days, gave me an opportunity of making the remark.' An appearance of this nature could not escape the observing eye of Charlevoix, the most sagacious, able, and learned of the French writers on America. Speaking of Lake Ontario,§ 'I observed,' said he, 'that in this lake, and I am told that the same thing happens in all the rest, there is a sort of flux and reflux almost instantaneous, the rocks near the banks being covered with water and uncovered again several times in the space of a quarter of an hour, even if the surface of the lake was very calm, with scarce a breath of wind. After reflecting for some time on this appearance, I imagined it was owing to the springs at the bottom of the lakes, and to the shock of their currents, with those of the rivers which fall into them from all sides, and thus produce those intermitting motions.'

"Pownall|| says, 'Lake Ontario, like the Mediterranean, the Caspian, and other large invasated waters, has a small rising and falling of the water, like tides, some twelve or eighteen inches perpendicular.'

"These are the only authorities of an old date to which I have had access. Those which I now refer to are of recent observation, and some are derived from oral communication. Mr. Benjamin Wright, a very judicious and intelligent gentleman, and one of the principal engineers on the Western Canal, informs me, that at a place called Mexico, about twenty miles from Oswego, Lake Ontario ebbs and flows every hour and a half about six inches, and that the flood is highest when the wind is from the shore.

"A gentleman of veracity and intelligence, who resides at the mouth of Genesee River, says that, this lake rises and falls four times each in every hour, whether there be a wind or not; that the smallest

* Forster's *History of the Voyages in the North*.

† De Saussure's *Voyages dans les Alpes*. Kinlock's *Letters from Geneva and France*. Coxe's *Switzerland*. Simond's *Switzerland*.

‡ La Hontan's *North America*, vol. ii.

§ *Journal Historique, d'un voyage, de L'amerique*, Letter xiii.

|| Topographical description of part of North America.

tide is four, and the highest twenty-eight inches, and that this occurs during a perfect calm.

"A similar appearance occurs on Lake Champlain. Captain Winans, one of the proprietors of the steam boats, who resides at Burlington, in Vermont, assures me, that in summer, when there has been a perfect calm for several days, he has observed at that place a flux and reflux of the lake four times every hour, with great regularity, and at every access rising four inches, as was obvious from a mark made on a log.

"Captain Storrow, a gentleman of talents, says, in a printed letter to General Brown, 'while at Green Bay, I made observations on the ebb and flow of a lake tide. At eleven o'clock A. M. I placed a stick perpendicularly in the water—at half past nine P. M. the water had risen five inches—at eight next morning it had fallen seven inches—at eight same evening it had risen eight inches. During this period the wind was in the same direction, blowing generally against the flow of the tide.'

"Judge Woodward, of Michigan, in a letter to Doctor Mitchill, states, that Mr. Benjamin F. Stickney, who resides on the Miami River of Lake Erie, some miles below the rapids, and a few miles from the mouth of the river, made observations on this subject for more than a fortnight, in June, 1820, the result of which is a conviction in his mind that there is a regular tide in Lake Erie—that it flows and ebbs twice in twenty-five hours, at intervals of about six hours and eleven minutes, and that it is greatest at the new and full moons, and least at the quarters. The minimum of rise within the period during which the observations were made, was as much as eight inches. The maximum of rise within the same period, was as much as forty inches. Mr. Lecuyer, a gentleman equally intelligent, expressed the same opinion as to a tide at Green Bay.

"If these exhibitions of a flux and reflux of the lakes were only occasional and incidental, not uniform, and periodical, there would be perhaps no great difficulty in assigning satisfactory causes. The *seiches* of the Lake of Geneva have been ascribed by Mr. Bertrand to the influence of electrical clouds which attract and raise the waters of the lake, and he supposes that this water afterwards falling produces those undulations of which the effect, like that of the tides, is most sensibly felt where the shores are most approximated.

"A more probable cause may be the unequal pressure of the atmosphere on the waters, which will of course rise higher as the weight of the incumbent air is less, and fall as it becomes greater; and these changes being almost always in operation, may ac-

count for the almost continual ebb and flow of the lakes.

"The cause assigned by Charlevoix is entirely unsatisfactory; and it is premature to form a theory on the subject. Facts and experiments ought to precede speculations; and we must leave it to future inquirers to ascertain the facts in extenso—to investigate the causes, and to determine whether this phenomenon be owing to the pressure of the atmosphere—the influence of the moon—the attraction of the clouds—the convexity or motion of the globe, or any other assignable agency.

"2. There is an annual rise and fall of Lake Erie. The rise generally commences in March, and terminates about the middle of July; and this is the case sooner or later with the other lakes. It is owing to the great accession of water produced by the melting of snow and ice, and by the vernal rains; and the fall is occasioned by the failure of most of these sources of supply in summer.

"3. There is, besides the annual rise of the lakes, a more extended periodical one, at least every three years, and then a correspondent declension. Some extend the time to five, and others to seven years. Some say that the highest rise is seven feet, and others differ as to the exact altitude; but there can be no doubt of the general certainty of the fact. Lake Erie began to rise in 1811, and continued to increase until 1815, when it was two feet higher than was ever known. The overflowing of the waters destroyed trees on the low lands more than two hundred years old, and the inhabitants of Detroit, which is an ancient settlement, had never seen or heard of such a rise before. It fell a little in 1816, rose again in 1817, and decreased until 1822. It was in June last on the rise, and one and a half feet higher than usual. In 1810 I walked on Bird Island; an island situate at the outlet of Lake Erie. In 1816 it was almost covered with water, and was scarcely visible. I am informed by an intelligent ship-master on the lakes, 'that when he visited Detroit in 1797, the waters were at their height. He went to the south the following year, and did not return to that place until 1802, when he found the waters considerably lower. Having understood that there was a rise and fall every seven years, he determined to ascertain how great it was; for which purpose he caused marks to be made on a solid wharf that had been built more than twenty years before, and was perfectly firm and immovable; and he found that the water declined on an average about an inch a year for nine years. What the fall was for five years during his absence he did not know, but it may be fairly stated at three

times as much yearly; that is, fifteen inches, if compared with subsequent occurrences of a similar character. The lake began to rise again in 1811, in the spring of which it rose six inches, but during the summer it fell two inches. In 1812 it rose fourteen inches, and subsided three inches, leaving a nett gain of fifteen inches in two years. The surrender of Detroit to the British, in October, 1812, compelled him to leave the country; but in October, 1813, he returned with the fleet, and the water was then at its greatest altitude, having in that year gained twelve inches—in all twenty-seven inches. In 1814 and 1815 it was stationary. In 1816 and 1817 it fell at least eighteen inches. And he further supposes, from appearances at Michilimackinack, that the whole town of that island was formerly under water, and that one of the ancient outlets of the lakes was by Chicago, which he states at only thirteen feet above the present level of the lake; and he says that every spring you may pass up the Chicago River and carry in the shoalest place five feet water into the Illinois, and from thence into the Mississippi.

“Mackenzie, in his account of his voyages through the continent, to the Frozen and Pacific oceans, in 1789 and 1793, says, that ‘along the surrounding branches of Lake Superior, there are evident marks of the decrease of its waters by the lines observable along them. The space, however, between the highest and the lowest is not so great as in the smaller lakes; as it does not amount to more than six feet; the former, or highest lines, are very faint.’

“4. The lakes are subject to extraordinary swells and risings. On the 18th of October, 1764, Colonel Bradstreet, who had been on an expedition against the Western Indians, broke up his camp at Sandusky to proceed on his return to Albany by Lake Erie. In the evening, as he was going to land the troops, a sudden swell of the lake, without any visible cause, destroyed several of his boats, but no lives were lost. This extraordinary event was, however, looked upon as the precursor of a storm, and accordingly one soon occurred which lasted several days. Mackenzie, before quoted, states that ‘a very curious phenomenon was observed some years ago at the Grand Portage in Lake Superior, for which no obvious cause could be assigned. The water withdrew with great precipitation, leaving the ground dry that had never before been visible; the fall being equal to four perpendicular feet, and rushing back with great velocity above the common mark. It continued thus falling and rising for several hours, gradually decreasing until it stopped at its usual height.’

“The following occurrence, equally extraordinary,

took place on the British side of Lake Erie, on or about the 30th May, 1823, which is thus described. ‘A little after sunset Lake Erie was observed to take a sudden and extraordinary rise, the weather being fine and clear, and the lake calm and smooth. It was principally noticed at the mouths of Otter and Kettle Creeks, which are twenty miles apart. At Otter Creek, it came in, without the least previous intimation, in a swell of *nine feet perpendicular height*, as was afterwards ascertained, rushed violently up the channel, drove a schooner of 35 tons burden from her moorings, threw her upon high ground, and rolled over the ordinary beach into the woods, completely inundating all the adjacent flats. This was followed by two others of equal height, which caused the creek to retrograde a mile and a half, and to overflow its banks, where water was never before seen, by seven or eight feet. The noise occasioned by its rushing with such rapidity along the winding channel, was truly astonishing. It was witnessed by a number of persons.

“‘At Kettle Creek several men were drawing a fish net in the lake, when suddenly they saw the water coming upon them in the manner above mentioned; and, letting go their net, they ran for their lives. The swell overtook them before they could reach the high bank, and swept them forward with great force; but, being expert swimmers, they escaped unhurt. The man who was in the skiff pulling in the sea line, was drove with it a considerable distance over the flat, and grounded upon a small eminence until the water subsided. There were three successive swells, as at Otter Creek, and the effects up the creek were the same, with this difference, the water only rose seven feet. In both cases, the lake, after the three swells had spent their force, gradually subsided, and in about twenty minutes was at its usual height and tranquillity. It was observed at other places along the shore, but the high steep banks did not admit of the same observation. In all, however, there was a general correspondence as to the height of the rise.

“‘Conjecture will doubtless be awake as to the cause of this most remarkable phenomenon; but it must only be conjectured, for it was unattended with any circumstance that could remotely hint at a probable cause. But such was the fact, and it must furnish its own comment.’

“Some have supposed that the occasional rise of Lake Erie is owing to the strong south winds in Lake Michigan; but this hypothesis cannot account satisfactorily for this appearance. Volney supposes that Lake Ontario is the crater of a volcano. Mackenzie

says, that many of the islands of Lake Superior, display a conformation of lava, intermixed with round stones of the size of a pigeon's egg. The western country abounds with what are called burning springs, consisting of volumes of hydrogen gas, issuing from spiracula in the earth, and it is underlaid with sulphur, coal, bitumen, and other inflammable substances. In boring for salt at Rocky Hill, in Ohio, about a mile and a half from Lake Erie, after proceeding to the depth of one hundred ninety-seven feet, the auger fell, and salt water spouted out for several hours. After the exhaustion of this water, great volumes of inflammable air issued through the aperture for a long time, and formed a cloud; and by ignition by the fire in the shops of the workmen, consumed and destroyed every thing in the vicinity.

"Whether the country round the Great Lakes is volcanic or not, is not material to the present inquiry. We know that the bowels of the earth are stored with inflammable materials, and that there exist strong indications of subterranean communications at enormous distances. Indeed, every thing in earthquakes seems to indicate the action of elastic fluids seeking an outlet to spread themselves in the atmosphere. At the period of the last, and the preceding destruction of Lisbon, according to Humboldt,* the sea was violently agitated as far as America. For instance, at the Island of Barbadoes, more than twelve hundred leagues from Portugal, and on Lake Ontario, strong agitations of the water were observed in October, 1755. The first destruction of Lisbon took place on the first day of November, 1755, and the last on the thirty-first day of March, 1764, the very year in which the sudden swelling of Lake Erie overwhelmed some of Colonel Bradstreet's vessels.

"Bakewell, in his *Geology*, states, that 'during the earthquake at Lisbon, in 1775, almost all the springs and lakes in Great Britain, and in every part of Europe, were violently agitated, many of them throwing up mud and sand, and emitting a fetid odour. The morning of the earthquake, the hot springs at Toplitz, in Bohemia, suddenly ceased to flow for a minute, and then burst forth with prodigious violence, throwing up turbid water, the temperature of which was higher than before. The hot wells at Bristol were coloured red, and rendered unfit for use for some months afterwards. Even the distant waters of Lake Ontario, in North America, were violently agitated at the time. The connexion which earthquakes continues Bakewell) have with distant volcanoes, and their

frequency at particular periods, are truly remarkable. The tremendous earthquakes in 1812, in the Carracas, were followed by an eruption in the Island of St. Vincents, from a volcano that had not been burning since 1718, and violent oscillations of the ground were felt, both in the islands and on the coast of America.'

"The late swell of Lake Erie has been followed by shocks of earthquakes, as well at a distance, as in the vicinity. Have we not therefore reason to believe, that the extraordinary agitations which sometimes occur in the lakes, are connected with earthquakes, and produced by the same causes?"

CHAPTER II.

CLIMATE, SOIL, &c.

THE United States are most desirably situated. They are placed in the northern temperate zone, and occupy just that portion of it which is most likely to yield a salubrious climate with a fertile soil. Happily removed alike from the consuming heats of the torrid zone, and the perpetual frosts of the polar regions, the republic is nevertheless of such an extent as almost to touch upon them both. The climate of a country stretching through nearly five and twenty degrees of latitude cannot but be of great diversity. In this respect, it has been divided into five regions, which may be denominated the *very cold*, the *cold*, the *temperate*, the *warm*, and the *hot*.†

1. The *very cold*, in the north-east, may be defined by running a line from St. Regis, on the St. Lawrence, along the high lands in the state of New York to Tioga Point, in Pennsylvania; thence to Stony Point, on Hudson River, and thence to Cape Cod, in Massachusetts. In this region the winters commence in November and end in April, and the summers commence in June and end in August. Both heat and cold go to great extremes, but the country is generally healthy. To the westward, north of a line drawn from the southern extremity of Lake Huron to the Rocky Mountains, the climate is also very cold, and the northern extremity is in winter excessively so. In this region the heat and cold go to still greater extremes than to the eastward. The highest, lowest, and mean heat for each month, at different situations, will be shown by the following table:

* Humboldt's *Persona* Narrative.

† Melish's Description of the United States.

METEOROLOGICAL TABLE.

	Portsmouth, N. H. 43 5 N. Lat. 6 16 E. Lon.*			Boston, Mass. 42 22 N. Lat. 5 48 E. Lon.			Mackinaw. 45 55 N. Lat. 17 30 W. Lon.			St. Peter's. 45 0 N. Lat. 15 30 W. Lon.		
1820.	High.	Low.	Mean.	High.	Low.	Mean.	High.	Low.	Mean.	High.	Low.	Mean.
January	35	9	21	35	5	23	..	..	..	29	-30†	0
February	48	3	30	50	1	29	..	..	..	46	-14	21
March	62	12	34	74	4	34	..	..	..	68	10	46
April	64	24	42	75	27	48	..	..	..	85	10	39
May	72	45	55	78	51	56	..	..	..	82	36	61
June	94	52	67	98	50	67	..	..	..	82	52	71
July	89	63	67	87	57	67	..	..	..	93	54	69
August	92	55	73	73	53	62	..	..	..	92	53	68
September	88	40	60	75	43	58	..	..	..	89	30	62
October	65	32	49	58	33	48	70	28	45	..	..	..
November	49	18	37	54	15	39	50	10	32	56	-7	31
December	38	12	25	42	8	27	34	4	21	32	-20	11
Mean of the year	45° 8'			47° 3'			incomplete			43° 9'		

The range of the thermometer in this region is not less than 128°, viz. from 30° below zero to 98° above it, including great extremes both of heat and cold. The most intense cold and the lowest average temperature are at St. Peter's, the point most remote from the ocean and from the principal lakes.

2. The *cold* region comprehends a great and very unequal range of country. In the eastern division it extends from the foregoing line to Lakes Ontario and Erie westward; and south on the Atlantic coast, to about Cape Henlopen on the Delaware. Thence a line may be protracted to Washington, along by the foot of the first mountains in Virginia to about Morgantown, North Carolina; thence through the mountains to Kenaway River, and north-east on the west side of the mountains to the upper part of Chestnut Ridge, in Pennsylvania. In the westward, the southern boundary of the very cold region before

mentioned may be assumed as the northern boundary of the cold; and the southern boundary of the cold may be protracted westward from the head of Chestnut Ridge to the high lands dividing the waters falling into the Ohio from those falling into the St. Lawrence, and along in a northern and western direction, crossing the Mississippi about thirty miles below Prairie des Chiens, thence south and west crossing the Missouri about thirty miles below the Platte River; thence southward to the west of the Great Osage village, and then eastward to the Arkansas River, above the Hot Springs. In this division the winters commence in December and end in March, and the heat of summer commences in May and ends in September. The heat and cold here also go to great extremes; but the weather is very changeable, particularly in winter, so that neither severe heat nor severe cold lasts long at a time. The country in this division is also generally healthy.

METEOROLOGICAL TABLE.

	New York. 40 43 N. Lat. 3 10 E. Lon.			Philadelphia. 39 57 N. Lat. 1 52 E. Lon.			Washington. 38 52 N. Lat.			Sackett's Har. 43 55 N. Lat. 1 0 E. Lon.			Detroit. 42 30 N. Lat. 5 48 W. Lon. 1818.			Prairie des Chiens. 42 36 N. Lat. 14 38 W. L.			Council Bluffs. 41 31 N. Lat. 19 45 W. Lon.		
1820.	High.	Low.	Mean.	High.	Low.	Mean.	High.	Low.	Mean.	High.	Low.	Mean.	High.	Low.	Mean.	High.	Low.	Mean.	High.	Low.	Mean.
January	48	9	28	48	6	26	42	14	32	30	12	23	44	4	24	..	..	..	40	-22	9
February	42	0	34	64	6	37	66	16	48	57	0	32	42	2	17	..	..	..	71	-8	30
March	68	16	38	70	22	41	68	26	44	64	9	33	61	0	32	..	..	..	70	0	34
April . . . . .	..	..	..	89	20	53	88	29	57	74	22	48	62	18	41	88	12	57	94	24	58
May . . . . .	..	..	..	82	45	60	84	51	63	70	22	52	81	34	53	90	39	61	90	50	69
June . . . . .	..	..	..	95	56	76	92	56	74	84	50	65	86	51	70	99	50	75	99	55	74
July . . . . .	..	..	..	98	70	78	88	70	81	87	58	73	92	65	69	90	54	74	97	58	75
August . . . . .	..	..	..	96	64	78	87	71	78	85	54	71	94	62	75	94	54	72	105	59	75
September . . . . .	..	..	..	94	44	71	85	51	71	87	44	66	92	47	71	90	32	64	93	42	68
October . . . . .	..	..	..	76	36	52	72	48	56	76	30	52	74	30	51	70	20	44	80	22	47
November . . . . .	..	..	..	60	22	40	64	34	50	60	20	41	60	24	40	60	-6	33	59	-4	34
December . . . . .	..	..	..	45	27	33	58	32	43	58	9	26	48	6	27	33	-14	16	50	-5	18
Mean of the year	incomplete			53° 7'			58° 1'			48° 6'			47° 4'			incomplete			49° 2'		

* The longitude in these tables is reckoned from the meridian of Washington.

† - signifies below zero.

In this region it may be observed that the most intense cold occurs at the most inland stations, Prairie des Chiens and Council Bluffs; but that the lowest average temperature is on the borders of the lakes.

3. The *temperate* region is situated between the cold and a line drawn from Morgantown, North Carolina, south-westward, along the foot of the mountains to their termination in Georgia, thence in a north-west direction by Florence, in Alabama, and crossing the Mississippi River about the upper part of the Chickasaw Bluffs, thence north-west to the Delaware towns, on White River, and thence south-west

to the Arkansas, above the Hot Springs. The region described within these limits lies in the very heart of the country, the whole being on a considerable elevation. It comprehends Kentucky and Missouri, with nearly the whole of Ohio, Indiana, Illinois, and Tennessee, the south part of Pennsylvania, the western part of Virginia, and small portions of North Carolina, Georgia, and Alabama. This climate is distinguished from the foregoing principally by having an earlier spring, and the weather is generally more settled and serene, although both heat and cold occasionally go to as great extremes.

METEOROLOGICAL TABLE.

Mo.	Pittsburg. 1820. 40 32 N. Lat. 2 46 W. Lon.			Zanesville. 1819. 39 59 N. Lat. 4 58 W. Lon.			Marietta. 1819. 39 30 N. Lat. 4 28 W. Lon.			Chillicothe. 1819. 39 20 N. Lat. 5 45 W. Lon.			Cincinnati. 1819. 39 6 N. Lat. 7 31 W. Lon.			Jeffersonville. 1819. 38 12 N. Lat. 8 34 W. Lon.			Gallatin. 1819. 36 23 N. Lat. 9 38 W. Lon.			Huntsville. 1819. 34 36 N. Lat. 9 55 W. Lon.		
	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean
Jan.	42	10	29	68	10	40	67	16	42	64	18	40	70	20	37	66	20	47	74	20	47	70	27	51
Feb.	62	10	42	64	18	39	62	13	39	66	15	40	64	16	42	64	18	44	72	20	48	70	28	53
Mar.	54	21	42	62	10	39	67	15	40	68	14	41	63	10	40	68	19	44	80	12	46	76	26	50
Apr.	81	30	60	83	24	56	89	28	54	78	30	57	79	30	57	78	28	58	82	28	60	81	32	63
May	82	40	58	88	42	65	80	34	64	86	44	69	86	42	66	88	50	69	90	38	67	87	42	69
June	90	54	71	90	50	74	86	56	73	98	60	77	94	51	74	97	60	80	92	54	75	92	62	81
July	92	64	76	93	51	75	88	62	72	74	62	77	91	58	74	94	60	79	90	53	76	90	66	81
Aug.	89	60	72	96	50	78	93	56	78	72	60	80	92	52	77	99	56	82	90	58	75	87	69	79
Sep.	89	41	64	92	41	69	88	48	69	89	52	70	90	45	69	94	50	70	94	42	71	86	60	76
Oct.	76	40	54	76	25	55	81	30	52	86	32	56	83	29	55	72	34	60	..	..	..	83	38	62
Nov.	62	32	46	71	20	49	72	22	48	72	32	59	76	28	51	68	30	53	80	22	54	79	36	58
Dec.	48	28	37	59	6	30	57	12	35	60	16	39	63	12	38	58	4	37	..	..	..	64	18	42
Mean	54° 2'			55° 7'			55° 6'			58° 8'			56° 8'			60° 3'			incomplete			63° 7'		

4. The region possessing a *warm* climate lies between the temperate and a line drawn from Cape Henry in a circular direction below Annapolis, and passing above Tarboro, and through Fayetteville, Columbia, Augusta, Milledgeville, and Fort Jackson, in Alabama, and thence a little south of west across the Mississippi, and on to the Sabine River, in the

latitude of Nacogdoches, in Texas. In this region the winters commence about the 1st of January, and end about the 1st of March; and the summers commence about the 1st of May, and end about the middle of October. The weather is pretty settled and steady, and except in swampy or marshy situations, the country is generally healthy.

METEOROLOGICAL TABLE.

Months.	Norfolk. 1820. 36 53 N. Lat 00 47 E. Lon.			Augusta. 1818. 33 15 N. Lat 5 00 W. Lon.			Milledgeville. 1819. 32 55 N. Lat. 6 10 W. Lon.			Monroe. 1819. 32 23 N. Lat 9 38 W. Lon.		
	High.	Low.	Mean.	High.	Low.	Mean.	High.	Low.	Mean.	High.	Low.	Mean.
January	..	..	..	71	19	51	70	17	48	72	38	63
February	..	..	..	74	20	48	68	31	45	78	29	57
March	..	..	..	79	34	54	70	33	57	86	30	63
April	..	..	..	83	22	61	84	42	65	87	48	72
May	..	..	..	..	..	..	..	..	..	92	51	73
June	..	..	..	..	..	..	92	61	82	94	57	76
July	89	70	80	100	72	85	95	78	87	92	63	79
August	89	74	79	..	..	..	92	78	86	94	65	80
September	83	71	78	..	..	..	92	62	79	..	..	..
October	80	50	67	..	..	..	..	..	..	90	35	62
November	79	41	56	..	..	..	..	..	..	..	..	..
December	65	40	50	..	..	..	..	..	..	76	21	39
Mean of the year	incomplete.			incomplete.			incomplete.			incomplete.		

5. The *hot* region extends from the southern extremity of the warm to the Atlantic Ocean and Gulf of Mexico. In this climate the summers commence in April and end in November, and the heat is often very oppressive; the winters are often very variable, but generally pleasant and healthy. The whole of this district being on the alluvial formation, there

are many swamps and marshes interspersed through it, and near these the summers are very unhealthy, but in high and dry situations the climate is favourable. The diseases particularly incident to this district are bilious fever, and fever and ague; but, on the other hand, pulmonary complaints, and many others which prevail in cold countries, are hardly known.

METEOROLOGICAL TABLE.

Months.	Fort Johnson. 1820.			Savannah. 1819.			Fernandina, Fl. 1820.			Fort Scott. 1820.			New Orleans. 1820.			Baton Rouge. 1820.			Camp Ripley. 1820.		
	33 51 N. Lat. 1 10 W. Lon.			32 8 N. Lat. 4 15 W. Lon.			30 37 N. Lat. 4 45 W. Lon.			30 43 N. Lat. 7 23 W. Lon.			30 00 N. Lat. 13 10 W. Lon.			30 36 W. Lon. 15 14 N. Lat.			31 18 N. Lat. 16 50 W. Lon.		
	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean	High.	Low.	Mean
January	63	32	47	75	28	53	79	35	55	74	32	55	..	..	..	..	..	..	..	..	..
February	79	40	55	79	32	57	78	50	65	72	31	61	..	..	..	78	51	64	..	..	..
March	62	34	60	87	30	60	70	50	64	78	38	66	..	..	..	78	32	61	..	..	..
April	82	32	67	89	34	64	85	45	72	89	44	68	78	58	73	86	42	70	87	55	76
May	82	60	69	93	56	74	86	61	74	88	56	74	87	72	79	90	58	75	88	54	76
June	84	64	75	97	64	78	87	67	78	91	50	78	91	72	86	94	60	81	92	57	78
July	89	75	81	94	68	78	87	71	80	91	60	79	90	80	82	90	70	79	93	72	81
August	90	72	83	91	68	78	88	70	79	92	68	80	92	78	85	92	74	83	94	65	82
September	86	67	78	92	60	76	87	73	80	80	65	75	88	71	81	88	64	77	92	56	77
October	84	50	67	87	41	66	85	50	69	89	60	70	84	45	67	88	40	67	85	48	66
November	79	40	61	..	..	..	76	43	64	78	40	60	75	39	57	84	36	61	84	32	60
December	70	51	57	..	..	..	75	50	61	84	32	59	77	39	60	76	40	60	79	28	53
	66° 7'			incomplete.			70° 1'			68° 7'			incomplete.			incomplete.			incomplete.		

It is worthy of remark, that the heat, though it is of longer duration in the warm and hot regions, is not of greater intensity than in the cold and very cold. In the latter the thermometer reaches 98°, or even 99°;

while in the former the summer heat is generally below that line, and only once appears in the tables above it, namely, at 100°. We add a table, giving a more general view of the subject under consideration.

General Abstract from all the Observations made at the Military Posts of the United States for 1820; Thirty-seven posts, extending from 30° to 45° 55' North Lat. and 6° 46' East to 19° 45' West Longitude.

Months.	Average at			General Average.	Highest, and place of observation.	Lowest, and place of observation.	Range.
	7 A. M.	2 P. M.	9 P. M.				
January	25	33	29	29	79 Fernandina	+30 St. Peters	109
February	38	46	32	42	79 Fort Johnson	-17 Plattsburgh	96
March	41	49	44	45	78 Belle Fontaine	-10 St. Peters	88
April	56	66	60	61	94 Council Bluffs	10 Ditto	84
May	61	71	65	66	90 Montpellier	22 Ditto	68
June	70	84	74	76	99 Prairie des Chiens	50 Ditto	49
July	74	82	75	77	98 Fort Mifflin, Phila.	54 Ditto	44
August	73	81	75	76	*105 Council Bluffs	53 Boston	52
September	67	76	70	71	99 Ditto	30 St. Peters	69
October	52	60	56	56	88 Baton Rouge	20 Prairie des Chiens	68
November	42	50	46	46	84 Camp Ripley	-7 St. Peters	91
December	34	41	37	37	84 Fort Scott	-30 Ditto	114
General Mean	52	62	56	57	*105 Sunday, 13th Aug.	+30 Sunday, 30th Jan.	135

Mr. Melish informs us, that the observations from which his tables were compiled were taken, as we believe similar observations have generally been, at the hours of seven A. M. and two and nine P. M.; but we agree in the opinion that this method gives a mean temperature much too high. It is obvious that the coldest portion of the twenty-four hours, that between nine in the evening and seven in the morning, is wholly excluded from the calculation.

It appears also, as might have been expected, that, by taking the morning observations very early, Messrs. Brantz and Haines have produced tables with a mean temperature lower, and doubtless more correct, than others. As a specimen of the deductions to be made on this ground from Mr. Melish's tables, which we have given above, our readers may refer to the city of Washington, in the second region, the mean temperature of which is stated to be 58°, while Mr

Brantz reduces it to 52° and $\frac{1}{2}$, Mr. Haines to 49° , and Mr. Darby finally adjudges it to 53° and $\frac{1}{2}$. Climate, however, is not to be determined by the mere use of the thermometer. Great as the importance of this instrument is, when accurately constructed and properly employed, it is liable to so much error and unskilful use, and has yielded, in point of fact, so many irreconcilable and obviously mistaken results,

that little dependance can be placed on it alone. Hence arises the necessity of taking into the account prevailing winds, the freezing of rivers, vegetable indications, and whatever else may be auxiliary to a correct judgment. The following table, exhibiting the course of the winds and the state of the atmosphere at various places in the United States, is given by Mr. Melish, as compiled from official information :

Places.	Winds.								Atmosphere.			
	N.	N. W.	N. E.	E.	S. E.	S.	S. W.	W.	Clear	Cloudy	Rain	Snow
Portsmouth	16	147	40	32	22	35	28	41	208	116	23	18
Boston	30	64	43	32	16	37	88	49	224	84	35	22
Mackinaw, Oct. Nov. Dec.	7	16	13	7	17	6	9	17	12	24	33	23
St. Peters, eleven months	19	74	21	12	71	34	70	53	223	32	57	31
New York, Jan. Feb. March	7	37	8	0	3	0	28	6	54	15	14	11
Philadelphia	19	76	65	39	31	28	65	43	216	85	55	9
Washington	56	87	35	16	24	40	55	56	222	58	72	13
Sackett's Harbour	48	58	47	14	42	25	88	38	186	93	54	37
Prairie des Chiens, nine months	11	80	9	2	26	8	81	27	138	51	46	9
Council Bluffs	41	62	34	23	113	46	27	16	236	73	48	11
Detroit, six months	21	10	9	13	18	76	17	20	84	86	12	2
Pittsburgh	26	54	36	25	58	28	71	42	210	55	45	20
Norfolk, six months	6	33	55	11	21	2	51	5	123	39	21	3
Fort Johnson	44	37	45	30	35	108	40	25	216	78	64	0
Fernandina	15	32	82	25	145	6	41	20	257	68	40	0
Fort Scott	39	7	11	59	16	71	15	146	209	88	68	0
Baton Rouge, eleven months	15	69	35	23	65	17	103	8	162	76	97	0
Camp Ripley, nine months	17	27	31	13	46	20	74	28	129	66	71	0

In this table the state of the atmosphere deserves notice, for the very large proportion of dry and clear weather. This is a highly characteristic and important feature of the North American continent, as contrasted,

at least, with our own country, and contributes much to diminish the rigour and increase the salubrity of the climate. For the further illustration of the prevailing winds, we insert two tables given by Mr. Darby :

Abstract of the prevailing Winds at various points of the United States, above North Latitude 35° . The whole numbers reduced to proportions of 1000.

Places of Observation.	N. E.	N.	N. W.	W.	S. W.	S.	S. E.	E.
Polar Sea	122	100	394	794	132	32	112	28
Fort Brady	32	58	159	274	79	86	241	73
Basin of Columbia	130	20	118	44	401	33	200	53
Valley of Missouri	117	58	294	73	244	21	141	48
Council Bluffs	71	196	151	53	101	246	134	61
Fort Howard	384	23	23	26	535	13	3	6
Fort Crawford	33	186	250	53	101	190	137	10
New Harmony	101	131	124	165	221	155	65	33
Cincinnati	164	22	211	77	343	22	135	26
Washington City	165	65	257	72	238	96	90	14
Baltimore	194		303		208		295	
Philadelphia	196	49	227	120	255	58	69	32
Germantown	97	48	194.3	301	167	49	64	78.5
New York	116	24	301	69	210	130	134	29
Newport, Rhode Island	112	101	218	61	335	66	89	33
Eastport, Maine	68	109	229.7	159	123	234	26	69
	2102	1190	3454	1638	3693	1231	1929	593.5

Abstract of the prevailing Winds at various points of the United States, below North Latitude 35°. The whole reduced to proportions of 1000.

Places of Observation.	N. E.	N.	N. W.	W.	S. W.	S.	S. E.	E.
Baton Rouge	236	5	133	83	208	94	153	100
Pensacola	417	36	97	47	83	25	250	58
Cantonment Jessap	146	79	99	65	151	109	235	127
Tampa Bay								
St. Augustine	416	36	97	47	83	25	250	58
Charleston, South Carolina	228	59	38	57	127	169	186	126
Smithville, North Carolina	42	293	109	141	52	299	21	53
Amount	1485	508	573	440	704	721	1095	522

The general result deducible from these tables, which are in harmony with many other observations, is, that westerly winds prevail above N. Lat. 35°, and easterly winds below it. In the former table, out of 15,830 decimal numbers, 8785 are from the N. W., W. and S. W.; in the latter, out of 5048 decimal numbers, 3102 are from the N. E., E. and S. E. This course of the winds is conceived by Mr. Darby to be owing to no circumstances peculiarly affecting the North American continent, but rather to some more general, though little understood, causes which give a similar determination to the air in similar latitudes over the whole earth. He connects the ascertained facts with the ingenious theory, that the winds uninfluenced by local interruptions, follow a parabolic curve from the polar to the tropical regions of the earth, with the sweep of the curve eastward.

Comparing with each other the several parts of the United States in the same latitudes, two diversities of climate may be noticed. The maritime district on the Pacific Ocean is much warmer than corresponding latitudes on the Atlantic. At the mouth of the river Columbia, in N. Lat. 46°, the thermometer is seldom below the freezing point; while on the eastern part of the continent the winters in this parallel are excessively cold. This seems to arise from the prevalence of westerly winds in the latitudes in question, a cause which makes all western coasts in similar parallels of milder climate than the eastern. In addition to this, it has been *supposed*, also, that the country in the valley of the Mississippi has milder winters than the Atlantic shores. Many persons seem to have been influenced to go into the interior by this idea, which was strongly maintained by the French traveller, Volney; but which, after exciting much diversity of opinion, is now shown to be as contrary to fact as it was in the first instance to probability. Mr. Darby thus sets the question at rest. Referring to the growth of vegetables, he says,*

"I surveyed southern Louisiana from the Sabine eastward, and found the live oak, *quercus sempervirens*, flourishing along the rivers in the delta and its vicinity; but when the great body of woods which bounds the delta above the marshes and prairies is passed, and the north-west winds from Texas have full sweep along the Calcasieu and the Sabine, the live oak ceases. In the delta this production is found as high as N. Lat. 30° 22', rising to the majesty of a forest tree; yet in their utmost range in the basin of Mississippi this and the chaemerops, or dwarf palm, cease far south of their limit on the Atlantic coast. The large palm (cabbage tree) is not found in Louisiana. The live oak rises to considerable height and column as high as the mouth of Cape Fear River, N. Lat. 34°, full 3½° beyond its greatest northern residence in the central basin. In Louisiana the orange tree cannot be cultivated to much advantage above N. Lat. 30°, and it ceases altogether about a degree farther north; the sugar cane, with a slightly higher locality, does not flourish beneficially much above the orange; but both these vegetables are profitably cultivated along the Atlantic coast as high as N. Lat. 33° 30'. We thus find tender vegetables either indigenous, or cultivated as objects of emolument, on latitudes along the Atlantic coast where no art could produce a similar effect directly west on the Mississippi. Natchez stands on a hill, or series of hills, about one hundred feet above the ordinary level of the Mississippi at N. Lat. 30° 33', almost directly west from Sapelo island; but at Natchez, and even on the low banks of the Mississippi opposite that city, neither the orange nor cane could be cultivated. The thermometer, whilst I myself resided in the vicinity, fell to 12° above zero near that city, in December, 1799. No winter passes at Natchez without severe frost, and snows are there annual and not seldom deep, and resting on the ground from five to ten or twelve days. I once, in January, 1812, witnessed at Opelousas snow eleven inches deep, which did not entirely disappear in less than

* View of the United States, p. 421.

seven or eight days. The Ohio and all its branches, as well as other rivers more westward, are more deeply, more frequently, and longer frozen, than those on the Atlantic Slope by a difference of three or four degrees of latitude." It is obvious, therefore, that the supposed mildness of the Ohio Valley, so much insisted on by Volney and others, has really no existence; but that, on the very contrary, the cold of winter is several degrees more severe in the interior than on the Atlantic border of the United States upon any given latitude.

In addition to the general division of the climate of the United States which we have already given, we may add the following view of that of the Mississippi Valley, for which we are indebted to the industrious observation of Mr. Flint.* We may conceive four distinct climates between the sources and the outlet of the Mississippi. The first, commencing at its sources and terminating at Prairie du Chien, corresponds pretty accurately to the climate between Montreal and Boston, with this difference, that the amount of snow falling in the former is much less than in the latter region. The growing of gourd seed corn, which demands a higher temperature to bring it to maturity, is not pursued in this region. The Irish potato is raised in this climate in the utmost perfection. Wheat and cultivated grasses succeed well. The apple and pear tree require fostering and southern exposure to bring fruit to perfection. The peach tree has still more the habits and the delicacy of a southern stranger, and requires a sheltered declivity with a southern exposure to succeed at all. Five months in the year may be said to be under the dominion of winter. For that length of time the cattle require shelter in the severe weather, and the still waters remain frozen.—The second climate prevails over the opposite states of Missouri and Illinois in their whole extent, or the country between 41° and 37° . Cattle, though much benefited by sheltering, and often needing it, here seldom receive it. It is not so favourable for cultivated grasses as the preceding region. Gourd seed corn is the only kind extensively planted. The winter commences with January, and ends with the second week in February; the ice in the still waters after that time thaws. Wheat, the inhabitant of a variety of climates, is at home, as a native, in this. The persimon and the pawpaw are found in its whole extent. It is the favoured region of the apple, the pear, and the peach. Snows neither fall deep, nor lie long. The Irish potato succeeds to a certain extent, but not as well as in the former climate; but

this disadvantage is supplied by the sweet potato, which, though not at home in this climate, with a little care in the cultivation, flourishes. The grandeur of the vegetation, and the temperature of March and April, indicate an approach towards the southern regions.—The third climate extends from 37° to 31° . Below 35° , in the rich alluvial soils, the apple tree begins to fail in bringing its fruit to perfection; apples worth eating are seldom raised much below New Madrid. Cotton, between this point and 33° , is raised, in favourable positions, for home consumption, but is seldom to be depended upon for a crop. Below 33° commences the proper climate for cotton, and here it is the staple article of cultivation. Festoons of long moss hang from the trees, and darken the forest, and the palmetto gives to the low alluvial grounds a grand and striking verdure. The muscadine grape, strongly designating climate, is first found here. Laurel trees become common in the forest, retaining their foliage and their verdure through the winter; wheat is no longer seen as an article of cultivation, but the fig tree brings its fruit to full maturity.—Below this limit to the gulf, is the fourth climate, the region of the sugar cane and the sweet orange tree. It would be, if it were cultivated, the region of the olive. Snow is no longer seen to fall, except a few flakes in the coldest storms; the streams are never frozen; winter is only marked by nights of white frosts, and days of north-west winds, which seldom last longer than three days in succession, and are followed by south winds and warm days. The trees are generally in leaf by the middle of February, and always by the first of March. Bats are hovering in the air during the night, and fire-flies are seen by the middle of February. Early in March the forests are in blossom; the delightful white flowers of the cornus florida, and the brilliant red tufts of the redbud, or *cereis canadensis*, are unfolded; the margins of the creeks and streams are perfumed with the meadow pink, or honeysuckle, yellow jessamine, and other fragrant flowers. During almost every night a thunder storm occurs. Cotton and corn are planted from March to July. In these regions the summers are uniformly hot, although there are days when the mercury rises as high in New England as in Louisiana; the heat, however, is more uniform and sustained, commences much earlier, and continues much later. From February to September thunder storms are common, often accompanied with severe thunder, and sometimes with gales, or tornadoes, in which the trees of the forest are prostrated in every direction, and the tract of country which is covered with the fallen trees is

* Geography and History of the Western States.

called a 'hurricane.' The depressing influence of the summer heat results from its long continuance, and its equable and unremitting tenor, rather than from the intensity of its ardour at any given time; it must, however, be admitted, that at all times the unclouded radiance of the vertical sun of this climate is extremely oppressive.

The winters, through the whole extent of the country, are variable, passing rapidly from warm to cold, and the reverse. Near the Mississippi, and where there is little to vary the general direction of the winds, they ordinarily blow three or four days from the north. In the northern and middle regions, the consequence is cold weather, frost more or less severe, and perhaps storm, with snow and sleet; during these days the rivers are covered with ice. When the opposite breeze alternates, there is immediately a bland and relaxing feeling in the atmosphere; it becomes warm, and the red-birds sing on these days in January and February, as far north as Prairie du Chien. These abrupt and frequent transitions can hardly fail to have an unfavourable influence upon health. From 40° to 36° N. Lat. the rivers almost invariably freeze, for a longer or shorter period, through the winter. At St. Louis on the Mississippi, and at Cincinnati on the Ohio, in nearly the same parallels, between 38° and 39° , the two rivers are sometimes capable of being crossed on the ice for eight weeks together.

Although the summers over all this valley must be admitted to be hot, yet the exemption of the country from mountains and other impediments to the free course of the winds, and the circumstance that the greater proportion of the country has a surface bare of forests, together probably with other unexplained atmospheric agents, concur to create, during the sultry months, almost a constant breeze; it thence happens that the air on these wide prairies is rendered fresh, and the heats are tempered in the same manner as is felt on the ocean. The same degree of heat in the spring does not advance vegetation as rapidly in the south as in the north. "We have seen a brilliant sun, and felt the lassitude of warm spring days continued in succession," says Mr. Flint, "and yet have remarked the buds to remain almost stationary, and the development of vegetation to be almost imperceptible; while the same amount of heat at Quebec would have completely unfolded the foliage, and clothed the earth with verdure."

It is a very prominent feature of the climate of North America, that it is much colder than similar latitudes in Europe; it appears strikingly from the fact that the New England states, which fall within

the very cold or coldest section of the republic, are in the same latitude as Italy. The principal cause of this difference is to be found, doubtless, in the vast extent of land which, with little intermission, stretches into the north-polar regions, and forms an immense deposit of ice and snow for the refrigeration of the southern lands. The changes of the seasons are for the most part abrupt; and on the Atlantic coast it appears that very sudden and extensive changes of the weather are of frequent occurrence.

One of the causes operating on the climate of the United States, in a direction contrary to that which we have just noticed, is the oceanic current, commonly known as the Gulf Stream. It is now well ascertained that a current exists in the ocean, by which the whole body of water, for as much as 28° on each side of the equator, flows towards the west. This current setting in from the coast of Senegal, in Africa, is borne against that of central America, where a very large division of it forces its way into the Gulf of Mexico, whence it issues through the Bahama Channel, along the shore of the United States to Cape Hatteras, and towards Cape Cod. Mr. Darby shows, by tables constructed with great care, that the surface of this current is considerably warmer than that of any other part of the ocean. In 3° N. Lat. it was found by Humboldt at a temperature of 83° , gradually, and almost uniformly, cooling at greater distances from the equator, and at 40° N. or S. standing at 55° and 57° , a difference of 28° . From a variety of observations, it appears also that the temperature of the water of the Gulf Stream exceeds that of the air above it, generally by several degrees, and sometimes by nearly 20° . It is obvious, therefore, that this immense current, running always with considerable rapidity, and in the Bahama Channel with the force of a torrent, reaching sometimes the rate of five miles an hour, must have a great effect in diffusing caloric through the atmosphere, and especially upon the eastern and south-eastern shores of the United States. Allied to this oceanic current is the aerial one, the trade wind, which is known to flow in the same direction, and probably originates in the same cause, namely, the diurnal revolution of the earth. This current moves through the West Indies and the adjacent seas until it meets the American continent, which, in consequence of being slanted off from S. E. to N. W., impels the current of air in a similar course, and the current which passes towards the North American continent diverges over it in different directions. One branch takes a N. W. direction, and passing over New Mexico, and thence between the Stony Mountains and the Pacific Ocean, spends its force probably

about N. Lat. 50°. Another branch takes a N. E. direction, and blows partly over the mountains, but principally between the mountains and the Atlantic Ocean; it seems to spend its force about the Potomac, although it sometimes reaches as far as Philadelphia and New York. A third branch passes up the valleys of the Mississippi and Ohio, having often all the characteristics of the original trade wind, and is so strong that it frequently passes over the large lakes, and sometimes reaches Montreal, and even Quebec.

With respect to the climate of the United States, two ideas have been entertained, which still demand briefly to be noticed. It has been conceived by some persons to have undergone a considerable change for the better since its colonization by Europeans. This idea may have originated perhaps in the same causes as a similar one respecting the climate of Europe; and it appears to be equally without foundation. On the contrary, there seems sufficient reason to conclude that, with whatever local and temporary variations, the climate is substantially unchanged. The winter, cold over the United States, as every where else on earth, is in direct intensity with height, latitude, and exposure; the interior states being more exposed to the influence of a central, elevated, and frozen table land, have winters much more severe than are experienced on similar latitudes on the Atlantic Slope; and the interior summers are equally in excess. But if the general climate has not altered, it has been confidently believed, that as the country was cleared and the timber removed, the winters have become milder. That the clearing and improvement of a region may contribute to its *salubrity*, we entertain no question, the ways being obvious by which such a result must be produced; but we agree with Mr. Darby in thinking that it leads to no elevation of temperature. "Employed," says this gentleman, "ten or twelve years in exploring the prairies of Louisiana, I had ample means to test the seasons of a country naturally devoid of forest trees; and in the frequent, and sometimes not slight, snows of Opelousas, N. Lat. 30 $\frac{1}{2}$ °, I, as early as 1805, became convinced that removing timber must produce the very reverse of melioration, and then suspected, what is now proved, that in very open countries the range of the thermometer must be augmented." To this testimony may be added that of Mr. Dunbar, of Natchez, a close and very competent observer, respecting land which had been partially cleared. "It is with us a general remark, that of late years the summers have become hotter, and the winters colder, than formerly. Orange trees, and other tender exotics, have suffered more

in the neighbourhood of New Orleans within these four or five years than before that period; the sugar cane also has been so much injured by the severity of the first of the two last winters as greatly to discourage the planters, whose crops, in many instances, have fallen to one third, or less, of their expectations. In former years I have observed the mercury of the thermometer not to fall lower than 26° or 27°; but for a few years past it has generally, once or twice in the winter, fallen as low as from 17° to 20°, and on the 12th December, 1800, it was found sunk to 12°, which has hitherto had no parallel in this climate, and indicates a degree of cold which in any country would be reckoned considerable, and which probably may never again be produced by natural means in Lat. 31° 30'. As this apparent alteration of climate has been remarked only for a few years, and cannot be traced up to any visible, natural, or artificial change of sufficient magnitude, it would be in vain to search for its physical cause. Dr. Williamson and others have endeavoured to show that clearing, draining, and cultivation, extended over the face of a continent, must produce the double effect of the relaxation of the rigours of winter, and an abatement of the heats of summer. The former is probably more evident than the latter; but, admitting the demonstration to be conclusive, I would inquire whether a partial clearing, extending thirty or forty miles square, or to 300,000, or 3,000,000, may not be expected to produce a contrary effect, by admitting with full liberty the sunbeams on the uncovered surface of the earth in summer, and promoting during winter a free circulation of cold northern air."* To us it appears that Mr. Dunbar might have spoken with much greater confidence, and that the partial clearing of the country is a sufficient physical cause for the diminution of the temperature.

Many distinguished philosophers have maintained, that a great amelioration of the climates, both of Europe and Asia, has taken place within the period since correct observations have been made on the subject. This opinion has been supported by Buffon, Hume, Gibbon, the Abbe Du Bos, and others; and as it regards America, a similar opinion has been supported by Jefferson, Williams, and Holyoke. Within the last century, the temperature of our winters, says these American authorities, has been greatly mitigated, and Dr. Williamson himself, as cited already, has given us proofs of the beneficial results of clearing and cultivation in relaxing the rigours of winter, and diminishing the ardent heats of summer. A closer

* Transactions of the American Philosophical Society. vol. vi p. 40.

investigation of facts, however, we are inclined to believe, will demonstrate, that the improvements in our climate have not corresponded with the progress of cultivation and settlement; and the elaborate investigations of Noah Webster, render it more than questionable that such a view is unphilosophical. See his remarks on the supposed change in the temperature of winter, in vol. i. of the Transactions of the Connecticut Academy of Arts and Sciences. From this interesting paper, the following extracts are made.

"John Megapolensis, a Dutch clergyman, who resided at Albany, and wrote an account of the Mohawks, in 1644, a translation of which is in Hazard's Collection, vol. i. p. 517, says, of the climate, 'the summers are pretty hot, and the winters very cold. The summer continues till All Saints' Day, (Nov. 1,) but then the winter sets in, in the same manner as it commonly does in December, and freezes so much in one night that the ice will bear a man. The freezing commonly continues *three months*—sometimes there comes a warm and pleasant day, yet the thaw does not continue; but it freezes again till March, and then commonly the river begins to open, seldom in February." According to this account, the winters have not moderated; for the Hudson, at Albany, usually freezes early in December, and continues closed till March. A common winter is of three months duration.

Professor Kalm, who came to America in 1748, was very particular in his inquiries on this subject; and to the best information he could obtain, he added his own observations. He relates, vol. i. p. 21. Lond. 1772, that at Newcastle, the Delaware seldom froze in winter so as to obstruct navigation; but at Philadelphia, that river was, almost every winter, covered with ice, so as to interrupt navigation for some weeks together. In page 36, he says, the climate of Philadelphia was then temperate; the winter was not over severe, and its duration short—September and October were like August in Sweden, and the first days in February frequently as pleasant as the end of April and beginning of May in the middle of Sweden.

"In page 38 he says, the only disadvantage which the trade of Philadelphia suffers, is, the freezing of the river almost every winter for a month or more. In page 83 he states, that the winters he spent in the country were none of the coldest, but common ones, and that during his stay, the Delaware was not covered with ice strong enough to bear a carriage. In the next page, he adds, that the winters, though severe, did not continue above two months, and at

Philadelphia, sometimes less. Cherries were ripe about the 25th of May—(probably old style.)

"In page 197, the author, speaking of New York, states that the *harbour is good, and never froze except in extraordinary cold weather*; but he says, page 208, the winters at New York are much more severe than in Pennsylvania. He says afterwards, that the ice *stands on the Hudson several months*, by which he must mean the ice on that river in the interior country. January 21, 1749, people walked over the Delaware at Philadelphia on the ice; but no one ventured to ride over on horseback. But in page 362, the author informs us, that the river was covered with ice soon after new year, and the ice became so strong that people rode over on horseback—the ice continued to the 8th of February, when the river was cleared.

"The old men, of whom Kalm made inquiries respecting a change in the seasons, all agreed in the fact, that when the country was first settled, the weather was more uniform than it was in their time. Most of them were of opinion, that more snow fell when they were young; that the winters began earlier; and that the springs were also earlier. It was a saying among the old Swedes, that they had always grass at Easter, whether early or late.

"Mr. Norris, one of the first settlers of Philadelphia, and a merchant, related, that in his younger years, the Delaware was usually covered with ice by the middle of November, old style. One old Swede who remembered the very severe winter of 1697–8, was of opinion, there had been little change in the winters—that there were as great storms and as cold winters in his old age as in his childhood.

"Kalm, however, in his second volume, page 43, institutes a comparison between Old and New Sweden, as he terms the two countries, in which he mentions, among the disadvantages of New Sweden, or Delaware and Pennsylvania, that the nights are darker than in Old Sweden, where they are in part illuminated by snow and the lumen boreale. In this paragraph he says expressly, that the winters bring no permanent snow in Pennsylvania, to make the nights clear and travelling safe. The cold, he says, is often intense as in Old Sweden; but the snow which falls lies only a few days, and always goes off with a great deal of wet.

"From a careful comparison of these facts, it appears that the weather, in modern winters, is more inconstant, than when the earth was covered with wood, at the first settlement of Europeans in the country; that the warm weather of autumn extends further into the winter months, and the cold weather

of winter and spring encroaches upon the summer ; that the wind being more variable, snow is less permanent, and perhaps the same remark may be applicable to the ice of the rivers. These effects seem to result necessarily from the greater quantity of heat accumulated in the earth in summer, since the ground has been cleared of wood, and exposed to the rays of the sun ; and to the greater depth of frost in the earth in winter, by the exposure of its uncovered surface to the cold atmosphere."

"But we can hardly infer, from the facts that have yet been collected, that there is, in modern times, an actual diminution of the aggregate amount of cold in winter, on either continent.

In addition to these remarks, the observations of Dr. Williamson on the Climate of North Carolina might be inserted. Dr. Williamson observes, "There are not many countries, in which the state of health differs so much as it does at present in the different parts of North Carolina. At the distance of sixty or seventy miles from the coast, the land begins to rise into small hills, stones appear on the surface, and the streams ripple in their course. As we advance a little further to the westward, we find all the variety of hills and dales that may consist with a fertile country, fit for cultivation. In that happy climate, where the soil is good, and the water pure ; where the inhabitants enjoy the desirable effects of winter, without suffering by the rigorous severity of cold ; there are few of the diseases which are most painful and destructive in cold climates ; neither are the inhabitants wasted by the more fatal diseases of warm climates. There are not many parts in the United States, perhaps there is not any part of the world, in which families increase faster than in the western part of Carolina. When we consider, that the inhabitants are seldom affected by coughs, consumptions, or inflammatory complaints, for the winters are temperate ; that intermitting, bilious, or putrid fevers, are seldom found among them ; we naturally infer, that the climate must be healthy. It is not denied, that people, in many other climates or countries, are equally healthy with those in the western part of Carolina ; but the winters in other regions, that are deemed healthy, are more severe, or the land is less fertile, or it is not so cheap, or the means of supporting a family, from one cause and another, are more difficult than in Carolina ; whence it follows, that early marriages are not so frequent, and the increase of families is not so great. We have not the means of comparing the increase of people in Carolina with that in foreign countries, but it has been compared with the increase in other states. It appears by the

census taken in the year 1791, that the number of inhabitants above sixteen years old, exceeded the number under sixteen in all the northern and middle states, including Maryland. In the southern states there was a difference in favour of those under sixteen, and this difference was greater in North Carolina than in any other state, except Kentucky. This difference might be explained by supposing that the duration of human life is shorter in the southern states, and that sixteen years is nearer the middle of the general extent ; but this solution cannot be admitted, because in the most healthy parts of the southern states, the difference was greatest in favour of the class under sixteen. The greater proportion of people below sixteen must be the combined effect of early marriage and a good climate. Families are easily supported where the lands are good, and the winters mild. In this case people marry young, and have many children ; but early marriage alone will not produce a great proportion of children when compared to that of grown persons, because sickly climates are not less fatal to infants than to those who are more advanced in years. This distinction is fully supported by the census in North Carolina. The number of males in the whole state, below sixteen, was to that above sixteen, nearly as eleven to ten ; but this difference cannot be the effect of early marriage alone, or the facility of maintaining a family ; it depends very much on the salubrity of the climate. People live in the district of Edenton with more ease than in the district of Salisbury ; for their cattle require less feeding in winter, and they have a plentiful supply of fish ; but the proportion of persons under sixteen, was to that above sixteen, in Salisbury district, compared to that in Edenton district, nearly as three to one. In Salisbury district there were fifteen thousand eight hundred and twenty-six males under sixteen, and thirteen thousand nine hundred and eight above sixteen. The difference is nearly equal to a seventh part of the whole number of the older class. In Edenton district, the number of males under sixteen, was eight thousand six hundred and ninety-six, and the number above sixteen, was eight thousand three hundred and ninety-four. The difference being less than a twenty-seventh part of the number of the older class. This remarkable excess, in favour of Salisbury district, can only be explained by the greater salubrity of the climate. There are some very old people in the western parts of Carolina, but they were not born in that country ; they are older than the settlement. After the country shall have been planted two or three centuries, and the natives shall have attained the length of years that corres

ponds with the climate, a greater proportion of the inhabitants above sixteen years will doubtless be found."

To find the probable mean temperature of any place by comparing it with another of which the temperature is known, Mr. Darby suggests that one degree of Fahrenheit may be allowed for one degree of latitude, and the converse; and that 400 feet of elevation may be assumed to lower the thermometer one degree: he adds, however, very justly, that so many circumstances contribute, slightly, to influence the thermometer, that only general results can be expected from such comparisons, and that when the difference of latitude

becomes considerable, they would be altogether delusive.

The rains of the United States are represented as occurring very irregularly, not only in the course of a single year, but through a succession of years. No sufficient data have yet been provided for the formation of philosophical views on this subject; but Mr. Darby has furnished us with tables of the monthly quantity of rain in several successive years at Baltimore, Germantown, and New Harmony, of which we avail ourselves. The Baltimore table we shall insert entire, adding to it the monthly mean quantities of the other two places.

Table of the monthly depth in inches of rain at Baltimore, from Mr. Brantz's Tables.

Months.	1817	1818	1819	1820	1821	1822	1823	1824	Mean.	Mean at German- town.	Mean at New Har- mony.
January	2.25	.9	.7	2.8	3.3	1.8	5.6	2.3	2.85	2.18	4.31
February	2.8	2.0	1.9	2.2	5.4	4.8	.7	5.9	3.225	3.58	4.04
March	4.5	3.0	4.55	3.3	1.7	1.3	7.1	4.3	3.71	3.07	3.38
April	1.5	2.1	2.7	1.1	2.1	2.1	1.8	4.7	2.20	2.62	4.52
May	2.6	6.45	4.1	4.4	5.1	1.5	2.1	2.95	3.65	2.87	2.61
June	9.1	1.15	1.3	4.6	1.8	1.5	1.6	5.03	3.66	3.22	4.41
July	3.5	4.1	2.2	2.2	7.5	4.35	3.6	3.37	3.85	4.25	3.54
August	10.4	2.0	4.3	8.0	0.3	.8	4.1	4.5	4.3	3.48	4.84
September	3.3	3.2	3.0	1.5	10.7	2.25	5.8	2.94	4.45	3.27	2.80
October	1.8	3.1	.7	7.8	3.4	2.5	2.8	1.77	2.975	3.50	2.84
November	3.7	2.0	1.1	2.7	5.6	5.1	3.1	2.27	3.2	3.01	1.62
December	3.6	2.6	2.2	1.9	3.3	1.2	6.25	2.25	2.9	3.05	3.94
Amount	48.55	32.6	28.75	40.5	50.2	29.2	44.55	42.28	39.97	38.10	42.85

The SOIL of the United States is naturally enough represented as comprehending every kind, from the very best to the very worst. Of course it is not to be supposed that it divides itself into such spaces as to render possible an accurate general estimate of it; we may nevertheless throw out a few hints of somewhat general application, leaving the minuter details for the account which we shall subsequently give of individual states. We may first notice that portion of the republic with which our readers are by this time familiar, under the name of the Atlantic Slope; we mean the country east of the Apalachian Mountains, from Cape Cod to Louisiana. Next to the ocean are salt meadows, or marshes, nearly level, sloping a very little towards the water, above which their surfaces have but little elevation wherever they are found. They are covered with a peculiar kind of grass, which is from six to twelve inches high, of a reddish colour, and grows very thick, the roots of which form a very compact turf or sward, and which requires a sharp instrument and considerable force to cut it. They are overflowed by the salt water a few inches deep several times in a year by the spring tides, and this appears to be necessary to the retention of their peculiar character; for if the water is kept from them

by dykes, the upland grasses take root, the turf moulders away or loses its tenacity, and in a few years their appearance is completely changed. As the surface of these meadows lies a little above common high-water mark, there is generally a slope of about six feet in two or three rods, to low-water mark; and this slope is covered with a coarse tall grass called sedge, which requires a partial inundation every tide, or twice in twenty-four hours, to bring it to maturity. Adjoining the salt meadows, on the same level, and at the farthest extent to which the salt water flows at spring tides, fresh meadows commence by an almost imperceptible line of distinction, and they generally extend to the upland; but sometimes there is wet ground covered with bushes or a swamp between them and the upland. They are wet and soft, and few will bear a wagon. Similar meadows are sometimes found several miles from any salt meadows or salt water, and generally at the heads of rivers, where the face of the country is level. The general appearance of all these meadows is the same; being covered with wild grass of different kinds from twelve to thirty-six inches high, according to the quantity of water in the soil, and the more water there is, the coarser and taller the grass will be, until flags and

rushes take its place. The meadows are much lower than the upland, and were evidently formed by the agency of water, which has deposited an alluvial soil, composed of the finer particles from the higher grounds, and of decayed vegetable substances. If they are drained by a large ditch round them at the foot of the upland, and one through the lowest part of them, so that the water from it may soon run off, they become hard, will produce cultivated grass and even trees, and will in a few years lose all their former features, except their low situation and level aspect.

The soil of this section is to a great extent sandy; very light, therefore, and sometimes barren, more especially near the coast, where also is much marsh land, with extensive swamps. These swamps are in many places to an immense extent covered with an impenetrable growth of timber, especially of the cypress and some species of pine, the maturity of which is favoured by the deep clayey soil, augmented by a fresh deposit every year; Louisiana, towards the sea, exhibits a great breadth of this character through its whole reach. Along the rivers there is found a considerable quantity of rich clay; many fertile spots likewise are interspersed among the sands, and the land generally improves as it approaches the mountains. The central portion of the slope between the mountains and the sea possesses the best soil, the change of which is particularly discernible along the course of the rocky ridge which has already been described in our account of this region. In the alluvial district of Louisiana, the soil is for the most part deep and rich; it is also strong and vigorous on the Red River. Along the range of the Apalachian Mountains a thin and poor soil prevails, mingled, however, with many rich and productive valleys. In the northern portion of it are a large number of boulders, which give to the country a very stony and barren appearance, even where the soil is fertile.

When we cross the mountains, and come to the great plain descending from them to the Mississippi, we survey an immense extent of almost universally fertile country. The general surface of the Mississippi Valley may be classed under three distinct aspects,—the thickly timbered, the barrens, and the prairie country. In the first division, every traveller has remarked, as soon as he descends to this valley, a grandeur in the form and size of the trees, a depth of verdure in the foliage, a magnificent prodigality of growth of every sort, that distinguishes this country from other regions. The trees are large, tall, and rise aloft, like columns, free from branches. In the rich lands they are generally wreathed with a drapery

of ivy, bignonia, grape vines, or other creepers. Intermingled with the foliage of the trees are the broad leaves of the grape vines, with trunks occasionally as large as the human body. Sometimes the forests are as free from undergrowth as an orchard; at others, the only shrub that is seen among the trees is the pawpaw, with its splendid foliage and graceful stems; but often, especially in the richer alluvions of the south, beneath the trees there are impenetrable cane brakes, and a tangle of brambles, brier vines, and every sort of weed; which constitute the safe retreats of bears and panthers. This undergrowth universally indicates a rich soil.

The country denominated barrens has a very distinct and peculiar configuration. It is generally a country with a surface undulating with gentle hills, characterized by long and uniform ridges. The soil is for the most part of a clayey texture, of a reddish or grayish colour, and is covered with a tall and coarse grass. In addition to a peculiarity of aspect more easily felt than described, the trees are generally thinly scattered, seldom large or very small. They are chiefly of the different kinds of oaks, and the trees of the barrens have an appearance and configuration appropriate to the soil they inhabit. The land never exceeds second rate in quality, and is more generally third rate. It is favourable, in the proper latitudes, to the growth of wheat and orchards. The barrens are found in a level country, with here and there a gentle rise, only a few feet higher than the land around it. On these little elevations, for they are not hills, trees grow, and grass also; but grass and weeds are the only occupants of the soil where there is no rise of ground. The soil is alluvial to a greater or less depth in the barrens, though on some of the highest points there is little or none; the lower the ground the deeper the alluvion. On these elevations, where there is no alluvion, is stiff blue clay, without pebbles. Under the alluvial soil in the lower grounds are pebbles. On the little ridges, wherever the land is not too moist, the oak or the hickory (walnut) has taken possession, and there grows to a moderate height in clusters. It would seem, that whenever the land had become sufficiently dry for an acorn or a hickory nut to sprout, take root, and grow, it did so; and from one or more of these trees, in time, others have grown around them in such clusters as we now behold; where the land is lower, and the soil deeper, more moist and more fertile, the grass was too thick, and the soil too wet, for such kind of trees to grow as were found in the immediate vicinity. Imagine, then, natural meadows of various dimensions, and of every figure which the imagination can

conceive, with here and there a gentle rise of ground, decked with a few scattered trees or a thick cluster of them, and bearing a tall coarse grass, which is thin on the elevated parts, but on the lower grounds thick and luxuriant; imagine, also, a rill of a reddish colour, scarcely meandering through ground a little lower than the surrounding plain—and you will have a very correct idea of the appearance of these barrens. On the whole, the barrens have an aspect so peculiar and appropriate, that no person at all used to this country is in doubt for a moment when he enters on the region occupied by them. There are large districts of this kind in Kentucky, Tennessee, and Alabama; it is common in Illinois and Missouri, and is seen with more or less frequency over all the valley of the Mississippi. In this region, and in the hazel or bushy prairies, are most frequently seen those singular cavities called sink-holes. They are generally in the shape of funnels, or inverted cones, from ten to seventy feet in depth, and on the surface from sixty to three hundred feet in circumference. There are generally willows and other aquatic vegetables at their sides and bottoms; there is little doubt that they are caused by running waters, which find their way through the limestone cavities beneath the upper stratum of soil.

The remaining, and by far the most extensive surface, is that of the prairies. Although they have no inconsiderable diversity of aspect, these may be classed under three general divisions; the healthy, or bushy; the alluvial, or wet; and the dry, or rolling prairies. The healthy prairies seem to be of an intermediate character between the alluvial prairies and the barrens. They have springs. They are covered with hazel and furze bushes, small sassafras shrubs, with frequent grape vines, and in the summer with an infinite profusion of flowers; the bushes are often overtopped with the common hop vine. Prairies of this description are very common in Indiana, Illinois, and Missouri, and they occur among the other prairies for a considerable distance towards the Chippewyan Mountains. The dry or undulating prairies are for the most part destitute of springs, and of all vegetation, but weeds, flowering plants, and grass. To the sight they are so nearly level, and the roundings of their undulations so gentle, that the eye, taking in a great surface at a single view, deems them a dead level; but the ravines made by the water-courses through them, sufficiently indicate that their swells and declinations communicate a quick motion to the waters that fall on them. This is by far the most extensive class of prairies. These are the plains over which the buffaloes range; and it is these plains,

without wood or water, in which the traveller may wander for days, and see the horizon on every side sinking to contact with the grass. The alluvial or wet prairies form the last and smallest division. They generally occur on the margins of the great water-courses, although they are sometimes found, with all their distinctive features, far from the points where waters now run. They are commonly basins, as regards the adjacent regions, and their outlines are marked by regular benches. They are for the most part of a black, deep, and very friable soil, and of exhaustless fertility. In the proper latitudes they are the best soils for wheat and maize, but are ordinarily too tender and loamy for the cultivated grasses, though they rear their own native grasses of astonishing height and luxuriance. An exact account of the size and rankness of the weeds, flowering plants, and grass, on the richer alluvial prairies of Illinois and Missouri, would seem to those who have not seen them an idle exaggeration. Still more than the rolling prairies, they impress the eye as a dead level; but they still have their slight inclinations and depressions, where their waters are arrested and carried off: yet, from their immense amount of vegetation, and from the equality of their surface wherever they are considerably extensive, they have small ponds, and bayous, which fill from the rivers and from rains, and are only exhausted during the intense heats of summer, by evaporation. These ponds, in the alluvial prairies that are connected with the rivers, when they overflow by bayous, are filled in the season of high waters with fish of the various kinds; as the waters subside, and their connecting courses with the river become dry, the fish are taken by cart-loads among the tall grass, where the water is three or four feet deep. When the waters evaporate, during the heats of summer, the fish die, and although thousands of buzzards prey upon them, they become a source of pollution to the atmosphere; hence these prairies, beautiful as they seem to the eye, and extraordinary as is their fertility, are very unfavourable positions, in point of salubrity. Flocks of deer are seen scouring across these rich plains, or feeding peaceably with the domestic cattle. In the spring and autumn innumerable flocks of water-fowls are seen wheeling their flight about the lakes and ponds of these prairies, and they find copious pasture in the oily seeds of the plants and grasses that have seeded during the summer. During the months of vegetation no adequate idea could be conveyed by description of the number, forms, varieties, scents, and hues of the flowering plants, or of the various flowers of the richer prairies. In the barrens are four or five varieties of la-

dies' slippers, of different and the most splendid colours, but the violets, and the humbler and more modest kinds of garden flowers, are not capable of competing with the rank growth of grass and weeds that choke them; some of the taller and hardier kinds of the liliaceous plants struggle for display, and rear themselves high enough to be seen. Most of the prairie flowers have tall and arrowy stems, and spiked or tassellated heads, and the flowers have great size, gaudiness, and splendour, without much fragrance or delicacy. The most striking of these flowers we may notice further in another place; only remarking here, that during the summer the prairies present distinct successions of dominant hues as the season advances. The prevalent colour of the prairie flowers in spring is bluish purple; in midsummer, red, with a considerable proportion of yellow; in autumn the flowers are very large, many of them of the helianthus form, and the prairie receives from them such a splendid colouring of yellow, as almost to present to the imagination an immense surface of gilding.

The northern shores of Lakes Ontario and Erie, the western shore of Lake Huron, (the eastern shore of Lake Michigan is sandy and barren,) and the general surface of the valleys of the Ohio, the Illinois, and the Mississippi, afford a highly productive soil. The extended valley of the Tennessee, also, more to the southward, is one of the most fertile portions of the republic. The same character of fertility extends itself beyond the Mississippi, below the Missouri, until it is checked by the Ozark Mountains, the productive portion of which is confined to the valleys. On the banks of the Missouri, likewise, and for some distance up its tributary streams, rich soil is found. The same may be said of the Mississippi above its junction with the Missouri; but towards the sources of these rivers the ground is extremely barren. The southern coast of Lake Superior is either sandy or rocky, and generally sterile. To the west of the Ozark Mountains and of the Missouri the soil becomes less and less fertile, till at length we reach an immense tract of sand and barrenness, extending the whole way to the Chippewayan Mountains. This portion of the United States is rendered more desolate by the large quantity of salt and magnesia contained both in the soil and the rivers; it has been, not unjustly, called the Great Desert of North America, and bears no inconsiderable resemblance to the tract of the same denomination in Africa. It never can be permanently inhabited. Eastward of the Mississippi there is a copious natural growth of timber: but the region westward of that river is marked

by the gradual diminution and final disappearance of this important production, a circumstance by which the country is rendered unfit for settlers, independently of the quality of the soil. Lumber is almost totally absent from the banks of the Missouri above the River Platte, although the soil still continues rich.

With the Chippewayan mountains commences a change. The summits of these mountains, of course, are sterile, being rugged rocks, and covered with snow the greater part of the year; but among them are sheltered and fertile valleys. The timber in the mountains is pine, spruce, fir, and the other terebinthines. The terrace plains below generally have a fine soil, but are very deficient in timber. The prairies, like those in the Mississippi valley, are covered with grass, and a profusion of most beautiful flowers. Among the prairie plants are two or three kinds of edible roots, which furnish vegetable food to the savages, as an accompaniment to the great proportion of salmon which they devour. Wild sage is also an abundant herb; it grows of a size and height like a small tree, and on these extensive plains is one of the principal articles of fuel. The sea shore, for a considerable distance to the interior, is skirted with deep and thick forests of evergreens, such as pine and hemlock. On the whole, it is believed that few countries on the earth have a more fertile soil and agreeable climate than the valleys of the region west of the Rocky Mountains.

When a farmer clears the land of the United States, under the trees he finds a stratum of black vegetable mould, more or less thick in proportion to the original properties of the soil, the time that the trees have been dropping their manure upon it, and the declivity which obstructs or facilitates its washing away; for this mould is lighter than water, and runs off rapidly from the sides of the hills, and seldom or never lays long on the steep descents of mountains. While this bed of vegetable mould remains, the labour of the farmer is rewarded by rich and abundant crops, for when he sows and reaps from such a soil, four or five years before he exhausts it, he not only expends as many years' natural production, but he consumes many hundred or perhaps thousand years' accumulation of natural manure, which it would require a very long time for the common operations of production and decomposition to replace. While this vegetable mould is in sufficient quantities on the surface, the land is more or less fertile, independently of the nature of the earth on which it lies; it is when this coat of manure is gone, and the land worn out by constant cropping, that

the soil shows its fertility, as depending on the nature of the rock of the country, and the species of earth or loam resulting from their decomposition. It is at that time that the difference between a granite and limestone soil appears, and any one can see the effects, though few ever think of inquiring into the cause; yet it is evident that the washing and decomposition of a granite soil, can only afford sand mixed with a small proportion of clay, from the mode in which the rocks divide in their process of decomposition; and even this small quantity is liable to filter through the interstices left in the aggregates of gravel, by the form of their crystalline particles. The limestone, on the contrary, by its easy solution and facility of decomposition, furnishes to the exhausted soil, with every rain, a quantity of food, fitted by solution for vegetable absorption, as well as a great quantity of mould divided and triturated into impalpable powder, which forms an excellent pabulum, through which the vegetable can receive the other fluids necessary for its growth. Meantime this mould forms a retentive base or soil, which prevents the filtration of the smaller particles, and even retains the water in its pores, so as to give it out by regular evaporation to the surface, when necessary for the increase and support of the plants that may be sown on the land.

In such a variety of climate and exposure, in a country alternately covered in one point with the thickest forests, and in another spreading out into grassy plains, in one section having a very dry, and in another a very humid atmosphere, and having every shade of temperature, from that of the Arctic regions to that of the West Indies, there must necessarily be generated all the forms and varieties of disease that spring simply from climate. Emigrants will always find it unsafe to select their residence near stagnant waters and creeping bayous, on the rich and heavy timbered alluvions; yet these, from their fertility, and the ease with which they are brought into cultivation, are the points most frequently selected. The rich plains of the Scioto were the graves of the first settlers; but they have long since been brought into cultivation, and have lost their character for insalubrity. A thousand places in the west, which were selected as residences by the first emigrants on account of their fertility, and which were at first regarded as haunts of disease and mortality, have now a character for salubrity. On the lower courses of the Ohio, the Wabash, the Tennessee, the Mississippi and its southern tributaries,—in short, wherever the bottoms are wide, the forests deep, the surface level and sloping back

from the river, and the vegetation rank; wherever the rivers overflow, and leave stagnant waters that are only carried off by evaporation; wherever there are in the bottoms ponds and lagoons, to catch and retain the rains and the overflow, it may be assumed as a general maxim, that such positions will be unhealthy, and more or less so as more or fewer of these circumstances concur. Wherever these causes of disease exist, there is no part of the country which has not a summer of sufficient heat and duration to quicken them into fatal action. The very rich and extensive alluvial prairies of the upper Mississippi and of the Illinois, which are covered with a prodigious growth of grass and weeds, generally contain marshy basins, small lakes, and ponds, where the water from the bluffs and the high lands is caught and retained. They will ordinarily prove unhealthy, some think more so than the timbered country, until these reservoirs of stagnant waters are all drained, and the surplus vegetation is burned off, or otherwise removed by the progress of cultivation. These places strike the eye with delight. Their openness and exposure to be swept by the winds seem to preclude them from the chance of sickness; their extraordinary fertility, and their being at once ready for the plough, held out allurements to emigrants; but there seems to be in the great plan of providence a scale in which the advantages and disadvantages of human condition are balanced. Where the lands are extremely fertile it seems to be appended to them, as a drawback to that advantage, that they are generally sickly. Emigrants have scarcely ever paused long enough, or taken sufficient elements into the calculation, in selecting their residence, with a view to its salubrity. When the choice is to be made, they are often encumbered with families, generally feel stinted both for time and money, and are in a hurry to commence operations for the supply of their wants; they are thus apt to give too little weight to the most important motive of all which ought to determine their election. A deep bottom, a fertile soil, a position on the margin of a navigable stream; these are apt to be the determining elements of their choice. The heavy forest is levelled; a thousand trees moulder and putrify about the cabin; the stagnant waters which, while shielded from the action of the sun by the forest, had remained comparatively innoxious, exposed now to the burning rays of the sun, and rendered more deleterious by being filled with trunks and branches of decaying trees and all kinds of putrid vegetation, become laboratories of miasma, and generate on every side the seeds of disease.

When it is known that such have been precisely the circumstances in which a great portion of the emigrants to the western country have fixed themselves, in open cabins that drink in the humid atmosphere of the night through a hundred crevices, in a new and untried climate, under a higher temperature, under the operation of a new diet and regimen, and, perhaps, under the depressing influence of severe labour and exposure, need we wonder that the country has acquired a general character of unhealthiness? With every allowance, however, there can be no doubt, that in the southern and middle regions of this valley, the wide, level, and heavy timbered alluvions are intrinsically more or less unhealthy; neither can it be disguised, that in these situations the new resident is subject to bilious complaints, to remitting fevers, and, more than all, to intermitting fever, or fever and ague. This complaint is the general scourge of the valley.

It is an undoubted fact, explained in different ways and by different theories by the people, that even in the most unfavourable positions, on the lower waters of the Ohio, or even the bayous of the Arkansas or Red River, the emigrant is not so much exposed to disease while his cabin is still under the shade of the unbroken forest. The most dangerous period is, after the trees have been levelled a year or two, and while they are still decaying about the dwelling. This well-known fact would seem to give plausibility to the doctrine, that these deep and grand forests feed their foliage with an atmosphere that is adverse to the life of man; and that when the timber is cleared away, the miasma, the noxious air, that used to be absorbed and devoured by the redundant vegetation and foliage of the forest, and incorporated with its growth, thus detached and disengaged, and inhaled by the new residents, becomes a source of disease. Another fact, in relation to the choice of a residence, with a view to its salubrity, has been abundantly and unanswerably proved by experience. It is, that bluffs on the margins of wide bottoms and alluvial prairies are more unhealthy than situations in the bottom, or prairie, which they overlook. This fact has been amply demonstrated on the Ohio bottoms and bluffs, on the margins of the alluvial prairies of the upper Mississippi, and, in short, wherever a high bluff overlooks a wide bottom. The inhabitants on the airy and beautiful bluffs that bound the noble prairies of the upper Mississippi, in an atmosphere apparently so pure as to preclude all causes of disease, are far more subject to fever and ague than the people that live below them on the level of the prairies; the same has been re-

marked of the Chickasaw bluffs, Fort Pickering, or Memphis, Fort Adams, Natchez, Baton Rouge, and the bluffs generally along the great water-courses. Yet, though such is the uniform lesson of experience, so deceptive is the salubrious aspect of these airy hills, which swell above the dun and murky air that seems to lie like a mist over the wide bottoms below them, that most people, in choosing their residence, will be guided by their senses in opposition to experience. We know not whether the theory by which this fact is explained is a sound one or not. It is said that the miasma or noxious air from putrid vegetation and stagnant water in the swamps and bottoms, is specifically lighter than atmospheric air; that, of course, it rises from the plains, and hovers over the summits of the bluffs, here finding its level of specific gravity; and that, were it coloured, it would be seen overlaying the purer strata of air beneath it.—The slopes of the Alleghanies, the interior of Ohio and Kentucky, of Tennessee and Indiana, where the forest is cleared away, and the land has been for a sufficient time under cultivation, and where it is sufficiently remote from stagnant waters—the high prairies of Illinois and Missouri, the dry pine woods of the lower and southern country, parts of the plains of Opelousas and Attakapas, considerable portions of Alabama and Mississippi, and generally the open country towards the Chippewayan Mountains, may be considered as healthy as any other country. It is a very trite, but a true and important remark, that in proportion as the country becomes opened, cultivated, and peopled, in proportion as the redundancy and rankness of natural vegetation is replaced by that of cultivation, the country becomes more healthy.*

This section of the work of Mr. Hinton deserves to be enriched with further observations on the climate and diseases of the United States. Several American writers have favoured the public with their observations on this subject. Among the earliest of those who have largely contributed to the store of information on this important matter, might be cited Dr. Lionel Chalmers, whose work appeared in 1776. In the *Journal of Andrew Ellicot*, the reader will find much information on the same head. Dr. Rush's *Medical Inquiries and Observations*, also contain a large amount of valuable facts, touching the diseases of the American states, for a very considerable period. The remarks of Volney, on the same subject, though evincing much of the philosophical spirit of that eminent author, are wanting in accuracy, and seem

* Flint's Western States.

to have been dictated by preconceived theory. A document of very considerable value, by the late Lieutenant Governor Colden, printed in Hosack and Francis' American Medical and Philosophical Register, vol. i. deserves also a careful perusal, both for the interesting character of the facts which it contains, and the distinguished reputation of the writer. This article furnishes an account of the climate and diseases of the city of New York, as they prevailed there nearly a century ago: and as very few observations, relative to this country, of a similar kind, and written at so early a period, are known to exist, they are inserted here. It will be noticed, that Dr. Colden affirms, that the air of the country being always clear, and its spring strong, we have few consumptions or disorders of the lungs. If so, how shall we account for the extraordinary mortality occasioned by this disease at the present day? If our climate, as the editors of the Register remark, was at that early period so conducive to health, and particularly well calculated for the relief of pulmonic affections; and if, as many suppose, the changes which have been effected in it be for the better, we must attribute it principally to the increase of luxury, dissipation, and the great imprudence in dress; and not to what many have asserted, the very nature and vicissitudes of our seasons. But not to dwell upon a vexed question, we here insert the excellent paper of Dr. Colden:

"The city of New York (says Dr. Colden) lies nearly in 40 deg. and 40 min. of north latitude, and about five hours west from London. The climate partakes of the extreme climates; sometimes the summer is as hot as in the torrid zone, and the winter often is not less cold than in the northern parts of Europe. The heat and cold depend very much upon the winds, and, for that reason, in the same season of the year, are very various. In the summer, when the wind blows from the north-west, (which frequently happens,) the air is agreeably cool, but in the winter it is piercing cold. A southerly and south-westerly wind, if it continue any time, in summer, becomes very hot, and if we want winds, which sometimes happens in July and August, the air becomes sultry. Southerly winds in winter make the cold very moderate. We have much less rain or snow than in England, and the heaven is seldom overcast with clouds. The north-west wind being so extremely cold, even so far south as North-Carolina, I believe is owing to the high ridge of mountains which lies to the westward of Virginia, Maryland, Pennsylvania, and this province, though it be generally attributed to the great lakes which lie to the north-westward of this province:

for it is observed in all other countries, that the winds which come from any great quantity of water are not so cold as those that come from mountains, and are always accompanied with rain or moisture, whereas the north-west winds here are very dry; besides, the winds from the lakes must be stopped in their course by these high mountains which lie betwixt us and the lakes. This is confirmed by what I am told by those who have continued some time in the Sennekas country near Iagara, on the west side of these mountains, that the north-west winds there are always accompanied with rain as the easterly winds are here.

"Though there be so great a variety of weather in this country, the height of the mercury in the barometer does not suffer so great changes as in England. I have had a barometer by me about six years, and never observed the mercury lower than 29 inches and 7 or 8 tenths of an inch, and it is generally betwixt 30 and 30 and an half inches high, though I have sometimes observed it 31 inches high, which is as high as it is ever observed in England or I think any where else; but it is so high only in the time of very hard frost.

"The spring is much later than in England: we perceive but very little of it before the latter end of April: March is generally cold and windy, though for the most part the latter end of February be mild and warm. The winds in March are generally northerly, and they as well as the cold are owing to the melting of the snow to the northward of us, for these winds are always preceded by some warm weather either in the latter end of February or beginning of March. The lateness of the spring is owing to the whole country being covered with wood, so that the sun cannot easily dissolve the snow which lies under the trees, or warms the earth. The lateness of the spring makes it short, the hot weather succeeding the cold very quickly. In the spring the people are subject to pleurisies and inflammatory fevers, as in all other countries, upon the breaking up of hard winters; but not so much as in Pennsylvania and in the countries to the southward. The country people, and such as are most exposed to the cold, are most liable to these distempers. Perhaps the reason of the southern countries being more subject to pleurisies is, that in those countries the poorer sort are not so well clothed and have not such warm houses as in this.

"The summer begins in the end of May, and continues hot to the beginning of September. July and August are the most sultry months, and very often rainy. The air in these two months is always

full of moisture, so much that the doors and windows are observed then to be more swelled than at any other time of the year, and iron rusts so much that it is difficult to keep any instrument clean which is made of that metal, though the weather be extremely hot at the same time. A far greater quantity of dew likewise falls in these months than at any other time, and begins to fall a considerable while before sun-set. The mornings are frequently foggy, especially near the river and marshes, after sun-rising. This proceeds from the quantity of vapour which falls in the night, and is easily raised, but it is generally dissipated before ten in the morning. The heat in these months is a great deal more uneasy than in June, though a greater quantity of the sun's rays falls upon the earth in that month than in these. This is owing to the quantity of vapour in the air, which retains the heat and becomes in a manner scalding. For it is always observed, that the heat is a great deal more uneasy before rain (though the sun does not shine clear) than it is after a shower, when it shines with its greatest brightness; and a burning-glass before rain does not burn so vehemently as it does after rain. If the air continues sultry after rain, we expect more rain speedily, or a great quantity of dew that night. The air is frequently fanned in the hot months with sudden gusts of north-west winds. They commonly arise in the afternoon, and blow violently for half an hour or a little more, with heavy showers of rain and thunder-claps, and leave the air agreeably cool and serene. When the country was first settled, these gusts were very frequent, hardly a day in the hot seasons passing without them: but now, since the country begins to be cleared, the summer is not so sultry, and these gusts are not near so frequent. They are likewise much more frequent in the provinces to the southward of us than in this.

"The thermometer (mine is of Mr. Patrick's make) in the summer, within doors, where the sun cannot reach, is generally about 20, though at sometimes it is above 15, and at other times below 30. In June, I tried the difference betwixt what it was in the house and the open air, where it was exposed to the sun's rays betwixt 2 and 3 in the afternoon, which is generally the hottest time of the day, and found the spirit rise 36 degrees, or parts, marked on the thermometer, above what it was in the house. The thermometer in the house stood at 26, and exposed to the sun rose 5 degrees above the place marked 0.

"The months of July, August, and beginning of September, are the most sickly months in the year; more people being sick and more children dying than in all the rest of the year. The epidemical diseases

are intermitting fever, cholera morbus, and fluxes. The intermitting fevers are not near so frequent in this province as in those more to the southward, but I think fluxes are more frequent in this town than in Philadelphia. Two reasons may be assigned for this: first, the poor people at this time eat abundance of water-melons and other such kinds of fruit more than they do in Philadelphia: the other is, that the water in the town is not near so good as there, being brackish and so hard (as it is commonly termed) that it will not dissolve soap.

"The fall in this country (and all over the main of America) is most agreeable from the beginning of September to the middle of November; the weather being mild and dry, the sky always serene, and the people healthy.

"We reckon the winter from the middle of November to March, though the violent frosts do not usually begin till about Christmas, and then to the middle of February it is extremely cold; the great river, during that time, being frozen so hard, that horses and sleds pass daily upon it. However it does not every year freeze within several miles of the city, but in that time there is often so much ice floating that it is not safe for vessels to go to sea or to come in. The winter is above six weeks longer at Albany than at New-York, that place being 160 miles further up Hudson's river. It is likewise longer at Philadelphia than here, though that town be above a degree and a half more to the southward. This is owing to that place being situated upon a fresh-water river, which more easily freezes, and to its distance from the sea.

"The thermometer in the month of January is generally about 80. I observed it twice at 100, and once at 103; then the frost and cold were excessive: all liquors, except spirits, froze. I found Madeira wine (which is a very strong wine) frozen in the morning in a room where there had been a good fire all day till eleven at night. Hudson's river was then frozen over at the town, where it is about two miles broad, and the water very salt, so that people passed over upon the ice in crowds; but the ice did not continue fast at this place above three days. In the beginning of winter people are in danger of rheumatic pains, and in February of bastard pleurisies.

"The air of the country being almost always clear, and its spring strong, we have few consumptions, or diseases of the lungs. I never heard of a broken-winded horse in this country. People inclined to be consumptive in England, are often perfectly cured by our fine air, but if there be ulcers formed they die in a little time.

"The climate grows every day better as the country is cleared of the woods, and more healthy, as all the people that have lived long here testify. This has even been sensible to me, though I have been but about twelve years in the country; I therefore doubt not but it will in time become one of the most agreeable and healthy climates on the face of the earth. As it is at present, I prefer it to the climate of England, and I believe most people that have lived any considerable time here, and are returned to England, will confirm this."

We would further refer the reader, solicitous of information on this interesting topic, to several papers printed in the Transactions of the American Philosophical Society, to the New York Medical Repository, the medical works of Dr. Edward Miller, Currie on the Diseases of the United States, and to Hosack's Essays, chiefly on Medical and Philosophical subjects. This last named writer has furnished us with an important series of clinical observations on the diseases of New York for a series of years, and by his long and ample experience satisfactorily demonstrated the specific character of many of the epidemics with which the United States, at different periods, have been visited, and proved, to the conviction of the unprejudiced, that the American climate is not the *latitude of pestilence*. In another portion of this work we have embodied the observations of an American writer on the causes and consequences of the cholera. Whether the United States will again be visited by this dreadful scourge remains yet to be seen. The affirmative inference might be drawn from the notices which have been taken of it by several medical observers. See the Cholera Gazette, published by Carey & Lee, Philadelphia; Dr. Paine's Letters on the Cholera of New York; and Professor J. W. Francis' Letter on the Cholera Asphyxia. From this last named author we make the following extract:

"I purpose saying a few words, says Dr. Francis, on the peculiar character of this pestilence. It is conceded by all, that the origin of epidemic diseases is still enveloped in great obscurity; and the theories on this subject, whether referring to a distempered state of the atmosphere, to exhalations from putrid animal or vegetable matter, or to specific contagion, have been alike conjectural and unsatisfactory. The cholera, like all preceding epidemics, has exercised, but without any very useful results, the ingenuity of the speculative and philosophical observer. Whether the materies morbi of cholera claims a sidereal or a telluric origin, the atmosphere is the medium through which it operates. It prevails in all climates and at

all seasons; it exists in every variety of soils; on mountains and in valleys, in marshes and on rocks, in dryness and in humidity. Unlike influenza and some other specific diseases, its ravages are independent of winds and currents; neither the analysis of the gases of the atmosphere, nor barometrical or thermometrical investigations, solve the difficulty of its birth, and we are baffled in reviewing its progress to ascertain the peculiar influence of localities in producing it. The inhabitants of the dense city and the barren plain are subjected to its devastating power. Such, it must be admitted, is the fact, as relates to cholera asphyxia: yet so many anomalies appear in the career of this disease, that future observation and research are demanded, the better to discover its concealed cause, and the principles of its inter-communication. We must admit a distempered atmosphere, from whatever modifying agencies, and where men most do congregate, and local impurities most abound, there we infer an atmospheric condition from which cholera derives aid, to give strength to its venom, and wings to its extension. Deviations or extraordinary vicissitudes in the state of the seasons, and unfavourable localities, are perhaps conspicuously to be classed among the pestilential and co-operative causes. It follows in the track of human intercourse. Predisposition to the disease is acquired, and the exciting causes which call it forth embrace the innumerable circumstances connected with the economy of man in every state and condition: errors in diet and regimen; poverty, and its concomitants; wealth, with its indulgences; ill ventilated situations or apartments; the influence of fear, and whatever undermines the physical energies. The cholera courts the inebriate and the imprudent; the sober and the temperate are not exempt from its grasp; it attacks infantile existence, manhood, and old age; the voluptuary and the ascetic; both sexes, and all colours the unacclimated stranger, and the native citizen. To record its numerous occasional and exciting causes would require pages. Our prophylactics, therefore, must be summarily stated: the earliest attention is to be given to the premonitory diarrhoea; and among the essential requisites are pure air, personal cleanliness, food for the hungry, raiment for the naked, the avoidance of extremes of temperature, rigid dietetics, great moderation in the use of ardent drinks, or rather their total prohibition; the mind sustained by conscientious resolution, and a fixed confidence in a protecting Providence.

"That localities influence the character and extent of the pestilence, and aggravate its type in particular places in New York, we have multiplied proofs; but

there is something in the march of this disease which eludes our powers of detection. As if to add to its mysterious career, it has recently made its appearance in the village of Harlem, situate about seven miles from this city, where its malignancy and fatality have, within the period of a few days, far surpassed the worst results we have encountered among the most wretched and depraved of our population. I am credibly informed, that of sixty cases there was not a recovery. Three of the doctors, all I believe the place could boast of, fell beneath its stroke. Our latest account of its progress shows that it has propagated itself through our beautiful western country, from Albany on the Hudson to Buffalo on Lake Erie. Its extensive ravages give but a too well-grounded apprehension that it is destined to pervade our land.

"I have expressed the opinion, that the physiognomy of cholera asphyxia renders it, when once practically known, indelible on the memory; and I would, with all due deference, guard you against adopting the belief that the epidemic disease now prevailing, is only a modification of the usual cholera morbus of the United States. In whatever attire it approaches, you will find it a stranger. Equally earnest would I be to caution you in too hastily supposing that the malignant cholera is the same, or a disease similar to the spotted fever, or malignant pleurisy, or sinking typhus, as certain disorders have been termed. Nosology cannot classify a more distinctive disease than the prevailing cholera; and the confounding the spotted fever, the malignant pleurisy, and the sinking typhus of some of our northern and eastern states, with this strikingly characteristic disease, is discarding the leading principles which govern in the classification of morbid phenomena. You may deem these remarks superfluous; but, inasmuch as some have pronounced an identity in these diseases, and extolled, as the best method for the treatment of cholera, the almost unmeasured internal use of the diffusible stimuli, such as brandy, ether, and the like, and the excessive employment of opium, and other narcotics, I have no hesitation to add, that a like fatality would follow such practice in cholera as was witnessed from this empirical method many years ago, when spotted fever prevailed extensively among us. See the report of the Massachusetts Medical Society on the treatment of the spotted fever by this unwarrantable practice.

"Medical records abound in the declaration, that upon the invasion of pestilential diseases, the first cases are generally of most malignancy and fatality; and facts of this sort are sometimes explained on the

principle that those unfortunate individuals were most susceptible of the action of the noxious cause. In the progress thus far of the epidemic cholera among us, we still meet with examples marked by as formidable symptoms, and of as rapid termination, as at the commencement of the disease; and hence it is to be regretted, that some of our authorities have promulgated the opinion that the complaint is already of a mitigated type. Whatever our hopes, we have as yet no such grounds of congratulation. Look, too, at the history of the Montreal pestilence.

"There is another error, fraught with much hazard, which has lately received the sanction of authority. The medical council of our board of health have invited our absent citizens to an early return, and assert that those who have fairly passed through one attack of the disease, in the form of diarrhœa or of malignant cholera, may expect exemption from another. Be assured, this declaration is wholly untenable. There is no such immunity from a second attack of cholera, and our proofs establish a contrary doctrine. Cases are within the experience of several of our practitioners, of persons who had fairly gone through a first attack, and have fallen victims to a second. Very lately an individual had a protracted recovery from a third attack.

"On no former occasion has New York, frequently visited by the direful ravages of the yellow fever, exhibited a more melancholy spectacle. Of a resident population of two hundred and twenty thousand, and of transitory inhabitants more than twenty-five thousand at the time of the first occurrence of this pestilence, at least one third are now dispersed in every direction. It is impossible to give you at present any just view of the number of cases and deaths; the former are but too imperfectly reported to our board, and hence the number of interments seems extraordinary when compared with the reported cholera cases. About the middle of July the disease was most rife, and on one day of that month we had three hundred and eleven cases in public and private practice—interments one hundred and fifty-six. When we advert to the situation of the larger portion of those dependent on their daily labour for their daily food, it requires no effort of the imagination to picture the consequent distress. To the medical faculty, let me observe by the way, the inhabitants of this city are most deeply indebted at this moment. A small part, indeed, have fled, recreant to their honour and their duty; but the great body of them have, thus far, evinced to my own personal knowledge, a degree of courage and industry, which no hazard or difficulty has overcome. To no class of our citizens are pesti-

lential diseases more injurious in their prudential consequences: exposure to disease and death, with no other remuneration than the consciousness of duty, is the necessary attendant on every epidemic pestilence. When this formidable disease shall have disappeared from among us, and its history be recorded by the faithful historian, the skill and humane exertions of the medical profession, the munificence of the affluent, and the disinterested benevolence of all classes, will not be forgotten."

BOOK II.

NATURAL HISTORY.

INTRODUCTORY OBSERVATIONS.

THE discovery of the continent of America was, emphatically, the discovery of a new world. Although possessing, of course, many things in common with the other parts of this globe, and exhibiting proofs not only of a community, but of an identity of origin, and similarity of general character, it presented striking and interesting novelties in every department of nature's works. Many of its productions in the animal and vegetable worlds are not only peculiar, but both beautiful and useful in no ordinary degree, and have done much to enlarge the menagerie, to adorn the shrubbery, and to augment the resources of trade; while, though in some instances latest in attracting regard, the bosom of the earth contains not only ample treasures of metallic wealth, but splendid, if not unique specimens for the cabinet of the mineralogist, and new facts of no little curiosity for the geological inquirer. This extended and engaging field of scientific research has attracted, in part, the observation of which it is worthy; but up to the present period the examination of it is far from being complete in any direction. That portion of this immense continent to which our attention is directed, namely, the territory of the United States, possesses in its full proportion the interest which attaches to the whole; and we shall endeavour to collect, from all the authentic sources to which we have access, the matters of principal importance, so that our pages shall contain a summary view of the existing state of natural science as it respects this portion of the globe. We shall treat of the mineral, the vegetable, and the animal kingdoms, under the titles Geology, Mineralogy, Botany, and Zoology.

CHAPTER I.

GEOLOGY.

CONSIDERING the comparatively recent date of geology as a European science, it is not surprising

that earlier attention was not paid to in America. The first considerable attempt towards a scientific view of the character and relations of the strata in the United States was made by Mr. Maclure, a short time previous to the year 1812. His work, though small, and necessarily general in its statements, was a very valuable commencement, and has served both as a guide for subsequent inquirers, and a kind of *carte blanche*, on which their corrections or their discoveries may be inscribed. The field of geological research having been so well opened, the number of these subsequent labourers has been by no means small, and their investigations have been conducted with much skill and success. It has been our endeavour, in the necessarily condensed account we have prepared of the geology of the United States, to avail ourselves of the most recent information, and to illustrate this interesting subject by a map as accurate and complete as the fragments of knowledge in this department would enable us to compile. We have added such other drawings as appeared most material.

In order to obtain a view of the general geological formation of the territory of the United States, it will be advantageous to recall the features of its physical geography—the Appalachian Mountains on the east, with the slope from them to the Atlantic Ocean; the Chippewayan mountains to the west, with the valleys intervening between them and the Pacific Ocean;* and the extended valley between these elevated ranges, with the Ozark Mountains dividing it in the centre, and the Black Mountains occupying its north-western angle. The geological structure of the country is intimately connected with these natural features.

To begin with the Chippewayan, as by far the most elevated range.† The summits of this chain of mountains are formed entirely of primitive rocks, and almost exclusively, not merely of the granitic

* Observations on the Geology of the United States, by W. Maclure.

† See James's Expedition to the Rocky Mountains, vol. iii.

family, but of granite itself. The primitive clay-slate and limestone appear to be entirely wanting, together with mica-slate, while gneiss occurs in small quantity, and the granite passes into it by imperceptible gradations. As many members of the primitive class are here absent, the transition rocks of the Wernerians are altogether so. Immediately upon the granite rests a red and saline sandstone; and this through the whole length of the mountain chain, so far as it has been examined, without the intervention in any case of any other rock. We discover here, therefore, comparatively few traces of that magnificent profusion of animal and vegetable life, which in other parts of the globe has reared mountains of limestone, clay-slate, and those other aggregates, which if not entirely, are often in a great measure made up of the exuviae of living beings.

The western boundary of this formation of sandstone corresponds to the side of the easternmost granitic ranges. From the Platte towards the south, the sandstone increases in width, and on the Canadian it extends more than half the distance from the sources of that river to its confluence with the Arkansas. It consists of two members. 1. *Red sandstone*.—This rock, which is the lowest of the horizontal or flötz rocks met with in this part of the country, is very abundant in all the region immediately subjacent to the mountains. It occurs at intervals along their base, reposing against the primitive rocks in an erect or highly-inclined position. It varies in colour from bright brick-red to dark brown, and is sometimes found exhibiting various shades of yellow and gray; it is, however, almost invariably ferruginous; and the predominance of red in the colouring certainly entitles it to the distinctive appellation of red sandstone. The lowest part of the stratum has frequently least colour, and is also the most compact and hard. This is not, however, invariably the case; for in the neighbourhood of the Platte, that part of it which lies immediately upon the granite is white, and contains beds of coarse conglomerate or puddingstone. At the lowest points which could be examined, are found embodied large oval or irregular masses of hornstone, usually of a yellowish white or bluish colour; and near the surface of these masses, are found the few well-marked organic relics the stratum can be said to contain. Higher up the rock becomes much softer, and usually of a browner colour. It is disposed in immense horizontal laminæ or strata, which, when broken transversely, exhibit some tendency to separate into fragments of a rhombic form. The character which most particularly distinguishes this rock from the old red sandstone of

Werner, pointed out by Maclure in New York and New Jersey, appears to be the constant accompaniment of gypsum and muriate of soda. 2. *Argillaceous or gray sandstone*.—Immediately above the red sandstone where any rock rests upon it, a gray or yellowish-white sandstone, is found, which is the second variety. It most frequently contains a large proportion of argillaceous earth in the cement, and has a more or less slaty structure. The line of separation betwixt the two is often manifest and well defined, and in other instances they pass by imperceptible gradations into each other. The upper or gray sandstone is usually more compact and homogeneous than the red; it breaks, like the former, though more rarely, into large cubic or rhombic masses, which, on account of the more compact texture of the stone, retain their form longer than those of the other variety. The precipices formed by both are often lofty and perpendicular; but the projections and angles of the red are more worn and rounded than those of the gray. The narrow defiles and ravines which the streams of water have excavated, are less tortuous when they are made entirely in the gray sandstone than in other instances; and the springs of water flowing from it are more free of mineral impregnations than such as are found in the other variety.

The sandstone formation just described, though it must be supposed to have been at one time horizontal and uniform, is now found in a state of entire disruption and disorder. This may be best described, perhaps, by supposing oneself to be approaching the mountains from the valley of the Mississippi. The surface of the sandy plain rises perceptibly towards the base of the mountains; and becoming constantly more and more undulating, is at length broken, disclosing some cliffs and ledges of micaceous sandstone. This sandstone occurs in horizontal strata, sometimes divided by the beds of the streams, and forming low ridges parallel to the mountains. They are separated from the first range of primitive by more elevated cliffs of a similar sandstone, having its strata in a highly inclined position. Behind these, occur lofty but uninterrupted ranges of naked rocks, destitute of any covering of earthy or vegetable matter, and standing nearly perpendicular. At a distant view, they present to the eye the forms of walls, towers, pyramids, and columns, seeming rather the effect of the most laborious efforts of art, than the productions of nature. When surveyed from the more elevated summits of the first granitic range, these immense strata of sandstone standing on edge, and sometimes inclining at various angles towards

the primitive, resemble the plates of ice often seen thrown into a vertical position in the eddies and along the banks of rivers. The position of the strata of sandstone varies in the distance of a few miles from nearly horizontal to an inclination of more than sixty degrees, and that without any very manifest change of character, or the interposition of any other stratum. The laminæ most distant from the primitive, occupying the eastern sides of the first ridges, though lowest in actual elevation, may with propriety be considered the uppermost, as resting on those beyond. At the level of the surface of the great plain, they sink beneath the soil, and in the neighbourhood of the river Platte they are no more seen. This tract of sandstone, which skirts the eastern boundary of the Chippewyan Mountains, and appears to belong to that immense secondary formation which occupies the valley of the Mississippi, abounds in scenery of a grand and interesting character. The angle of inclination of the strata often approaches 90°, and is very rarely less than 45°. That side of the ridges next the primitive appears to have been broken off from a part of the stratum beyond, and is usually an abrupt and perpendicular precipice, sometimes even overhanging and sheltering a considerable extent of surface; the face of the stratum is usually smooth and hard, and both sides are alike destitute of soil and verdure. Elevations of this description are met with, varying from twenty to several thousand feet in thickness. Neither are they by any means uniform in height; some of them rise, probably, three or four hundred feet; and considering their singular character, would appear high, were they not subjected to an immediate and disadvantageous comparison with the stupendous Andes at whose feet they are placed. Their summits in some instances are regular and horizontal, and are crowned with a scanty growth of cedar and pine. Where the cement and most of the materials of the sandstone are silicious, the rock evinces a tendency to break into fragments of a rhombic form; and in this case the elevated edge presents an irregularly notched or serrated surface. Sandstones consisting of silex with the least intermixture of foreign ingredients, are the most durable; but in the region of which we speak, the variations in the composition, cement, and characters of the sandstone, are innumerable; clay and oxide of iron enter into its composition in considerable proportions, and render it unfit to withstand the attacks of the various agents whose effect is to hasten dissolution and decay. Highly elevated rocks of this description may well be supposed in a state of rapid and perceptible change. The sharp angles and asperities of surface which

they may have originally presented, are soon worn away; the matter constantly removed by the agency of water from their sides and summits is deposited at their feet; their elevation gradually diminishes, and even the inclination of their strata becomes at length obscure or wholly undiscoverable. This appears to have been a part of the process by which numerous conical hills and mounds have been interspersed among the highly inclined naked rocks above mentioned; they are often clothed with considerable verdure to their summits, and add greatly to the beauty of the surrounding scenery. The contrast of colours in this rude but majestic region often produces the most brilliant and grateful effects. The deep green of the small and almost procumbent cedars and junipers, with the less intense colours of various species of deciduous foliage, acquires new beauty from being placed as a margin to the glowing red and yellow seen on the surfaces of many of the rocks. The sandstone along the base of the mountains, though apparently not very recent, contains the remains of marine animals and plants, and embraces some extensive beds of puddingstone.

Overlying the red sandstone, southward of the Arkansas, are rocks of basaltic origin. They present a striking contrast, by their dark colour, by the vastness and irregularity of their masses, to the smooth, light, and fissile sandstone on which they rest. Sometimes they are compact and apparently homogeneous in their composition, and in many particulars of structure, form, hardness, &c. more analogous to the primitive rocks than to those recent secondary aggregates with which they are associated. In other instances, black and shapeless masses of porous and amygdaloidal substances are seen scattered about the plains or heaped in conical masses, but having no immediate connexion with the strata on which they rest. Most of the rocks belonging to this class were observed in the neighbourhood of the sources of the Canadian; and may be distinguished into two kinds, referable to the two divisions called greenstone and amygdaloid.

1. *Greenstone.* It appears in this district under almost every variety of form and character noticed by mineralogists. Sometimes it is nearly or quite free from any intermixture of hornblende, is of a fine dark green colour, and closely resembles some varieties of serpentine; sometimes its colour is a dull gray, graduating into brown and black of various shades and intensities. It forms numerous conical hills, of considerable elevation, scattered without order, or grouped in various directions. These hills are usually of a regular and beautiful form. The great plain on

which they repose is elevated, and destitute of timber or water, but ornamented with a carpet of thick and verdant grasses; and the hills, though steep and high, are sometimes smooth and green to the summit, the surface on all sides being unbroken by trees or rocks, and covered with thick turf. The whole forms a scene of singular beauty. "During our journey across the district now under consideration," says Dr. James, "we had constantly occasion to admire the freshness and abundance of the grasses and other herbaceous plants. The plains of the Platte and Arkansas we had seen brown and desolate, as if recently ravaged by fire; but here we passed elevated tracts, where for many miles, we could find no water for our own necessities, yet the vegetation possessed the freshness of spring in the most fertile regions." But the conic hills just mentioned are not the only form under which the greenstone appears. It sometimes rises in low irregular ridges, extending a considerable distance, and sloping on both sides into the level of the plain. In the narrow channels which the streams of water have sunk in it, may be seen perpendicular precipices of great elevation, but the valley between them is usually almost filled with large broken masses of the rock, which frequently exhibit a prismatic form. It falls readily into large masses, but seems strongly to resist that progress of disintegration which it must undergo before it can be removed by the water. The face of the perpendicular precipices is almost invariably marked by distinct and large seams running nearly parallel to each other, and at right angles with the horizon. Following the water-courses, which are sunk a considerable distance below the surface, the line of separation from the sandstone on which the greenstone rests at length becomes visible.

2. *Amygdaloid*, a porous or vesicular rock, of a very dark gray, greenish, or black colour, usually found near the greenstone, but sometimes in connexion with the sandstone. In its ultimate composition it resembles greenstone, but there were never seen in it such large fragments of feldspar and scales of mica as were observed in that rock. The amygdaloidal cavities which every where penetrate this rock are of various sizes, some of them appearing like bubbles which have been formed in a semifluid mass, and afterwards lengthened and variously distorted by the motion of the contiguous matter. Near the surface they contain a soft white or yellowish-white substance, very different from the rock itself, usually a soft chalk-like carbonate of lime. This gives the recent surface a mottled appearance; but on surfaces which have been for some time exposed to the air, this soft

substance has been removed, and the pores and vesicles are found empty. Amygdaloid does not appear to occupy any very great extent of the country near the mountains. It was not met with imbedded in, or surmounted by, any other rock. Like the greenstone, it forms conical hills, which sometimes occur in deep water-worn valleys, bounded on both sides by perpendicular walls of sandstone; it is likewise seen in the high plains, sometimes in the form of narrow and crooked ridges, apparently following what were anciently the beds of small brooks. When either of the two rocks last mentioned occur, it is not uncommon to find detached masses of a stone somewhat resembling the pumice-stone of commerce. It is usually of a faint red or yellowish-white colour, but sometimes it is brown, or nearly black. It feels less harsh than the pumice-stone which is used in the arts, and seems to consist in a great degree of clay. It appears to be entirely similar to the substance brought down the Missouri by the annual floods, and by many considered as a product of pseudo-volcanic fires, said to exist on that river. With regard to the soils resting upon the rocks of this trap formation, it may be worthy of remark, that gravel and water-worn pebbles rarely occur, except in situations where it is easy to see that they may have been derived from the substratum of sandstone. Pieces of charred wood were found in the sandstone underlying the trap rocks; but the travellers of Major Long's party did not observe any thing analogous to the whin-dykes of Europe, nor do they notice an altered character in the trap and sandstone at their junction.

Before we advert to any other object in the field we are now viewing, the valley immediately to the eastward of the Chippewayan range claims our attention, on account of its close geological connexion with those mountains. We have seen already that the sandstones of this region, diminishing in their elevation as they recede from the granite, dip at a moderate angle under the bed of the valley. After they are lost sight of, the valley itself consists of an immense accumulation of sand, the apparent debris of the mountains. The soil to an unknown depth is constituted of gravel made up of rounded granitic fragments, varying in dimensions from the size of a six-pound shot to finish sand. This great mass of granitic fragments, evidently brought down by the agency of water from the sides and summits of the mountains, slopes gradually from their base, and appears, as far as examinations have extended, to correspond, in some measure, to the elevation and extent of that part of the mountains opposite which it is placed. The minute particles derived from the

quartzose portions of the primitive aggregates, being least liable to decomposition, have been carried to the greatest distance, and now form the almost unmixed soil of the eastern margin of the great sandy desert : the central portions are of a coarser sand, with which some particles of feldspar and mica are intermixed ; nearer the mountains, pebbles and boulders become frequent, and at length almost cover the surface of the country. It is probable that many parts of this extensive desert may differ from that traversed by the Platte, in having the surface more or less covered with horizontal strata of sandstone and conglomerate, instead of loose sand and pebbles ; indeed, there are many appearances indicating that a formation of this kind formerly extended down the Platte much farther than at present. Towards the north the sands continue to the margin of the Black Mountains ; and below these still further to the east, until met by some more recent deposits intervening between them and the Ozark range. From the strong saline impregnation and the brick-red colour of the streams, especially below the Arkansas, there is reason to suppose that the red or saline sandstone is continued at no great depth under the sand to near the mouth of the Canadian river.

Let us now look at the next most considerable mountain range, the Apalachian ; in geological structure, as well as in other respects, differing widely from that we have just been contemplating. A large portion of these mountains, the whole of their eastern front, is composed of primitive rocks, comprehending both the granitic family and its associated strata of clay-slate and limestone. In New England the rocks of this class constitute the sea-coast, and, with some exceptions, extend inwards to the St. Lawrence, so as to form the general aspect, as well as the most elevated parts of the country. Southward of the Hudson the edge of the primitive follows the general contour of the mountains, at a considerable but variable distance from the sea, to their termination, and until it meets more recent deposits at the extremity of the mountain range. The breadth of this primitive belt is very unequal. It occupies but a small part of the country, where it passes through the states of Pennsylvania and Maryland, in which the highest part of the range of mountains to the west consists of transition, with some intervening valleys of secondary strata. In Virginia, the primitive increases in breadth, and proportionally in height, constituting the greatest mass, as well as the most elevated points of the mountains in the states of North Carolina and Georgia. Besides this range, there is a great mass of primitive on the west side

of Lake Champlain, having that lake and Lake George for a boundary on the east, joining the primitive in Canada to the north and north-west, and following a line from the Thousand Islands in the St. Lawrence, running nearly parallel to the Mohawk river, until it meets Lake George as a south-west limit. This mass of primitive rocks runs across the Mohawk at the Little Falls, and near to Johnstown, where it is covered by limestone ; it occupies all the mountainous country between Lake Champlain, the St. Lawrence, and Lake Ontario.

In general, the primitive rocks run from a north and south to a north-east and south-west direction, and dip generally to the south-east at an angle of more than forty-five degrees with the horizon ; their highest elevation is towards their north-western limit, whence they gradually descend to the south-east, there being covered by more recent strata ; and the greatest mass, as well as the highest mountains, consisting of primitive rock, is found towards the northern and southern extremities of the range. The mountains of this formation generally consist of detached masses, with rounded flat tops and a circular waving outline, as the White Hills to the north ; or conically waving with small pyramidal tops, as the peaks of Otter, and the ranges of hills to the south. Granite in large masses forms but a small part of this formation, and is found indifferently on the tops of mountains and in the plains ; it is both large and small grained, is mixed occasionally with hornblende and tale, and contains, as in Europe, rounded masses of a rock consisting of hornblende and feldspar, in small grains, disseminated through it ; it generally divides vertically into rhomboids, and, except in some very small grained varieties, there is no appearance of stratification. When found in low situations, as in the interior of South Carolina and Georgia, it is frequently so far decomposed as to have lost the adhesion of its particles, to the depth of thirty or forty feet below the surface ; each crystal is in its place, and the whole looks like solid granite, while you may take it up in handfuls like sand and gravel. Gneiss extends perhaps over a half of this formation, (though some writers have taken a lower estimate,) and includes in a great many places beds from three to 300 feet thick of a very large grained granite, which run in the same direction, and dip as the gneiss does ; it is in those beds generally that the emerald, phosphat of lime, tourmaline, garnet, cymophane, octahedral iron ore, graphic granite, &c. &c. are found. These beds are mixed, and alternate occasionally in the same gneiss, with the primitive limestone, the beds of hornblende and hornblende

slate, serpentine, magnetic iron ore, and feldspar rocks. In some places the gneiss contains so much mica as to run into mica slate; in others, large nodules of quartz or feldspar; in others, hornblende takes the place of the mica; in short, I scarcely know any of the primitive rocks, says Mr. Maclure, that may not occasionally be found included in the gneiss formation. Primitive clay-slate is not abundant, but the granular limestone is so, and wherever found is observed to be the uppermost in the series of primitive rocks. In this region hornblende rocks, porphyry, and serpentine are not wanting, and primitive trap or greenstone occurs abundantly. Several dykes are mentioned by Mr. Hitchcock* as deserving of more minute investigation. It has been observed that the granite by no means generally constitutes the most elevated parts of this region. From the highly crystalline gneiss rock at Philadelphia, there is a gradual ascent, across strata more and more recent, to the rocks of the coal formation, about the summit of the Alleghanies; and some of the granitic mountains of New England are far surpassed in elevation by the neighbouring hills and ridges of mica slate, talcose rocks, or even more recent aggregates. Below the Hudson, where the primitive rock is no longer bounded by the sea, it is in immediate contact, through its whole length, with secondary and tertiary beds, of which we shall have occasion to speak when we refer to the Atlantic Slope. On the other side, an immense body of transition strata, according to Werner, reposes on the primitive. These are to be traced on the eastern side of Lake Champlain, to within a short distance of New York, whence they stretch in a line corresponding with the general direction of the mountains to their southern extremity, the whole way constituting the north-western boundary of the primitive rocks.

The breadth of the transition district, like that of the primitive, is variable. Narrow towards the Gulf of Mexico, it widens gradually towards the north-east, till it reaches the river Hudson. From its upper portion it sends off a considerable arm, penetrating for several hundred miles into the granitic region, or overlying it, but running parallel with the principal body. After the primitive it forms some of the highest mountains in the range, and appears to be both higher and wider to the west in the states of Pennsylvania, Maryland, and part of Virginia, where the primitive is least extended and lowest in height. It contains all the varieties of rocks found in the same formation in Europe. It is generally broadest

where the primitive is narrowest, and vice versa; its breadth varying from twenty to one hundred miles. The stratification runs from a north and south to a north-east and south-west direction, dipping generally to the north-west at an angle in most places under forty-five degrees with the horizon; on the edge of the primitive it deviates in some places from this general rule, and dips for a short distance to the south-east. The most elevated ground is on the confines of North Carolina and Georgia, along the south-east limits to Magotty Gap, thence descending towards the north-west until it meets the secondary; from Magotty Gap north-easterly, the highest ground is on the north-west side, sloping gradually towards the primitive, which ranges along its south-eastern boundary. The outline of the mountains of this formation is almost a straight line, with few interruptions, bounding long parallel ridges of nearly the same height, declining gently towards the side where the stratification dips from the horizon, and more precipitous on the opposite side, where the edge of the stratum breaks out to the day.

This formation is composed of the following rocks: viz. a small-grained transition limestone, of all shades of colour, from white to dark blue, and in some places intimately mixed with strata of graywacke slate, with limespar in veins and disseminated, and in many places with small grained particles, so as to put on the appearance of a sandstone with excess of lime cement. This occurs in beds from fifty to five thousand feet in width, alternating with graywacke and graywacke slate. Near the borders of the primitive is found a siliceous aggregate, having particles of a light blue colour, from the size of a pin's head to an egg, disseminated in some places in a cement of a slaty texture, and in others in a quartzose cement; a fine sandstone cemented with quartz, in large masses, often of a slaty structure, with small detached scales of mica intervening; a rock not far from the borders of the primitive partaking both of the porphyry and the graywacke, having both feldspar crystals and round pebbles in it, with a cement of a kind of dull chlorite slate in excess; another, though rarer, with pebbles and feldspar crystals in a compact petrosiliceous cement; and a great variety of other rocks, which, from their composition and situation, cannot be classed but with the transition. The limestone, graywacke, and graywacke slate, generally occupy the valleys, and the quartzose aggregates the ridges, amongst which is what is called the country burr stone, or mill-stone grit, which must not be confounded with another rock, likewise denominated mill-stone grit which is a small grained granite, with much quartz

* Silliman's Journal, vol. vii.

found in the primitive formation. There are many and extensive caves in the limestone of this formation, some of which extend underground for several miles, and in which the bones of various animals are found. It is the lowest, and is considered as the most ancient of the rocks containing organized remains, which are those of cryptogamous plants, and animals without sight. The graywacke has been observed to contain impressions of organized remains, but these are usually those of zoophytic animals, and are exceedingly unlike those found so abundantly in the shale of coal formations. Its colours are variable; it is, however, most commonly bluish, black, or dark brown. Between Albany and Pittsfield it is met of a gray colour, and a few miles to the south-east of White-hall; New York, it is bright red. The graywacke appears to form the connecting link between the clay slate and a rock which has been called the old red sandstone, and is usually found intimately blended either with the one or the other. The sandstone to which the name just used is applied, occurs throughout the whole extent of the transition formation, and evidently belongs to the oldest depositions of that rock. It is for the most part distinctly stratified, and in all cases its stratification is inclined. It consists of grains of quartz united by a scanty cement, and usually more or less rounded, as if by attrition and the operation of currents of water; their fragments vary in magnitude from the finest sand to boulders of several pounds weight. Among the Alleghany mountains are many extensive beds of pudding-stone, or coarse conglomerate, usually coloured by oxide of iron. It is also to be observed, that this formation of transition sandstone sometimes embraces extensive beds, integrant particles of which have by no means the appearance of having been rounded by attrition. As in the case of almost all the rocks of secondary formation, there appear to have been periods during the time of its deposition when the waters of the superincumbent ocean ceased to throw down the mechanical debris of former rocks, and deposited earthy matter from a state of chemical solution. The old red sandstone contains no beds of bituminous coal, though many of anthracite, and few organized remains.

Of the rocks thus described, the limestone occurs extensively all along the north-western side of the primitive strata; sometimes, it is stated, alternating with granular or primitive limestone, which often graduates, by minute and almost imperceptible differences, into that which is decidedly secondary. If we suppose the whole of the Alleghany mountains of Pennsylvania, Maryland, and the western parts of

Virginia, removed to a level with the surface at the base of their eastern declivities, it is probable that their foundations, which would be thus exposed, would be found through their whole extent to be of transition limestone. About twenty miles west of Philadelphia and Harrisburgh, Cove Hill, the north and south mountains, and the other eastern ranges of the Alleghany, all repose upon the same rock. It is seen emerging from beneath the sandstone which forms the body of these mountains at O'Connell's town, and in most of the valleys between the Alleghanies; and we learn from Maclure that it extends to the south and west, nearly to the termination of this range of mountains at the confluence of the Alabama and Tombigbee rivers, in Mississippi. The clay-slate occurs in the central portions of that extensive field of transition which skirts the western margin of the primitive of New York and New England; and forms the great body of the Catskill Mountains. It is wider and more extensive in the north, occupying much of the surface in Vermont, and the northern parts of the state of New York. In the mountains of Pennsylvania, Maryland, and Virginia, its beds are of great thickness, and form in some instances the prevailing rocks, being, however, almost invariably overlaid by sandstone. The old red sandstone is of very frequent occurrence in the transition district along the whole range of mountains, and is perhaps more frequent and more abundant than any other aggregate. This region also has a considerable mixture of trap, comprehending greenstone, basalt, amygdaloid, and toadstone; but the newer trap rocks are entirely wanting in the whole of the mountain range. It is by no means to be supposed that the primitive and transition rocks observe exactly the limits which have been drawn. They frequently so interlock the one with the other as to make the drawing of any line of demarcation exceedingly difficult. There are also various large bodies of transition rock thrown to a considerable distance into the primitive region, as is the case particularly with one in the neighbourhood of Boston; while in many instances secondary rocks are found running along the valleys far into the bosom of the mountains. Between the primitive and transition rocks a series of primitive rocks sometimes intervenes, something different from the common primitive, having the structure of gneiss, with little mica, the scales detached and not contiguous, or much feldspar, rather granular than crystallized, mica slate, with small quantities of scaly mica, clay-slate, rather soft, and without lustre, the whole having a dull earthy fracture and gritty texture, partaking of transition and primitive, but not

properly belonging to either. There is great variety in the appearance of this rock, as it were an imitation of almost every species of the common primitive rocks, but differing from them by having a dull earthy fracture, gritty texture, and little or no crystallization.

With the edge of the transition strata we approach the western summits of the Apalachian Mountains, or the line from whence they begin to fall towards the Mississippi Valley. Along this line commences a series of secondary rocks, stretching westward to an immense extent towards the Mississippi and the lakes, and constituting one of the most interesting and important geological formations in the United States. Near the summit of the ridge called particularly the Alleghany, the change to secondary begins to appear; without the interposition of any other rock, and without any sudden change of features, the strata of sandstone become nearly horizontal, assuming gradually all the characters of secondary rocks; descending into the valleys, the transition strata again emerge to the light. The same thing happens in the case of the Catskill and other mountains west of the Hudson, their bases being of transition, and their summits crossed with secondary. This secondary region extends unbroken across the whole country to the shores of the lakes, being bounded on the west probably by the river Wabash, and, as you descend the Mississippi, by the more recent formations through which that river flows. It consists of various strata of sandstone, limestone, and clay, generally, but by no means exactly, corresponding with similar strata in this country. Although England has been considered a more advantageous station for examining the secondary strata than any other in Europe, it will by no means serve as a model for America. The strata are thus given by Professor Eaton:—1. Mill-stone grit; 2. Saliferous rock, probably identical with the saline sandstone of the Chippewyan Mountains; 3. Ferriferous rock; 4. Lias; 5. Geodiferous lime-rock; 6. Cornitiferous lime-rock; 7. Third graywacke. The fifth and sixth of these strata occupy the space of the English oolite, but are stated to be of a somewhat different character. Our green sand, iron sand, and associated marls, may be assigned to the third graywacke; but the chalk, it seems, in Europe no unimportant stratum, is entirely wanting; nor has a single particle of this substance been found in the whole of the United States; that which has been mistaken for it, and indeed used for it in some respects with success, is ascertained to be native argil, or pure clay. The limestone generally found in this district is of a bluish colour, running through all the

shades to a dingy black, having an even rather earthy fracture, and sometimes a schistose structure. The flints found in the secondary limestone in America are generally black, resembling Lydian stone, and in all kind of irregular forms and branches intimately mixed with the limestone. Its greatest elevation is on the south-east boundary, from which it falls almost imperceptibly to the north-west, and mingles with the alluvial of the Mississippi, having a mountain outline, straight and regular. A boundary of long and parallel ranges, of a gradually diminishing height as they approach to the north-west, a stratification almost perfectly horizontal, waving with the inequalities of the surface, distinguishes this from the two preceding formations. Immense beds of secondary limestone, of all shades, from light blue to black, intercepted in some places by extensive tracts of sandstone and other secondary aggregates, appears to constitute the foundation of this formation, on which reposes the great and valuable coal formation, which extends from the head waters of the Ohio, in Pennsylvania, with some interruption all the way to the waters of the Tombigbee, accompanied by the usual attendants, slaty clay and freestone with vegetable impressions, &c.; but in no instance yet ascertained covered by, or alternating with any rock, resembling basalt, or indeed any of those called the newest floetz trap formation. One grand peculiarity of this secondary region is the horizontal direction of the strata, which is almost perfect and uniform, no disturbing causes whatever appearing to have acted upon them since their deposition, excepting such as have worn them down from above; and in conjunction with this fact, it is striking to observe that trap rocks are entirely wanting through the whole extent. It results from these circumstances, that individual strata can be traced uninterrupted through many hundreds of miles, and that opportunities of investigation unparalleled elsewhere are afforded.

Having thus examined the two sides of the Mississippi Valley, we may now direct our attention to the region which occupies its centre. In a geological point of view this must be taken to comprehend not merely the Ozark Mountains, but the whole tract of country extending northwards from them to the shores of Lake Superior, bounded on the east by the rivers Wabash and Ohio and the recent deposits of the Mississippi, and on the west by a line drawn from nearly the western extremity of Lake Superior to the western declivity of the mountains.

The Ozark Mountains consist chiefly of secondary and transition rocks, but there are two points at which

the primitive makes its appearance.* About fifteen miles south east from the hot springs, near the Washita, granite is found *in situ*. "It forms the basis," says Dr. James, "and, as far as we could discover, the whole mass of a small hill, but little elevated above the level of the river; we found it emerging from beneath the soil at several parts of an area two or three hundred acres, but had not an opportunity to trace it to any great distance, nor to observe its connexion with any other rock. The extent of surface which it covers, we believe, cannot be very great." This granite is very soft, and disintegrates rapidly when exposed to the air. It is compounded of grayish-white quartz, yellowish-white feldspar, and an unusually large proportion of mica in variously and brilliantly coloured masses. These large laminæ of mica are white, pearl-colour, yellow, brown, green, and often black, and in some instances are so large and numerous as to exceed in proportion the other ingredients of the aggregate. Talc also enters in large proportion into the composition of this granite. It is indeed sometimes so abundant as to occasion a doubt whether the whole should not be considered a bed of talc, rather than granite. This talc is in tabular masses, two or three inches in diameter, and about half an inch in thickness. Zeolite is also so abundant as sometimes to seem to take the place of the other materials of the granite. The bed of one of the streams which traverse this formation is paved with small crystals of schorl, that of another with negative magnet. Sulphuret of iron is disseminated in the rock. Several of the appearances presented by this interesting mass of granite would seem to countenance the opinion that it is of a secondary origin, like that mentioned by Saussure as existing near the valley of Valorsine, at Semur en Auxois, and at the city of Lyons. In speaking of the rock at these places, he says, "It could not be doubted, on seeing these heaps of large crystals, that they are the produce of the rain-waters, which, passing through the granite, have dissolved and carried down these different elements, and have deposited them in these wide crevices, where they have formed new rocks of the same kind. The crystals of these new granites are larger than those of the ancient, on account of the repose which the waters enjoyed in the inside of these reservoirs." The granite of the Washita, if it is to be considered as of secondary formation, appears to be much more extensive than any of the kind hitherto known; but any more particulars must be ascertained before this

question can be settled. "We are ignorant," says Dr. James, "of the manner of its connexion with any other rock, nor do we know of any formation of primitive granite from which it could, by the action of water, have been derived: one can have no hesitation, however, in considering the Ozark Mountains as a separate system within themselves, and having no immediate connexion with either the Apalachian or the Chippewayan Mountains. May not an extensive range of granite and other primitive rocks have existed at some distant period where the Ozark Mountains now are, containing the vast quantities of the ores of lead, iron, &c. now found in rocks of secondary origin, and even in the alluvial soil? And may not the operations of water, during many ages, when an ocean rolled over the summits of these mountains, have worn down those primitive rocks, their detritus having been deposited horizontally upon their submarine sides and summits; so that the greater part of their surfaces are now covered by secondary aggregates? Our acquaintance with this range is, however, much too limited to admit of indulgence in such speculations."

Beside the cove of the Washita, another granitic region, according to Mr. Schoolcraft, occurs in the north-eastern extremity of the Ozark Mountains, in the mining district of Potosi. The granite appears about a mile west of St. Michael's, an antique French village, and suddenly emerges from the alluvial soil. "It constitutes," says Mr. Schoolcraft, "the summits of the greatest elevations, and also the depths of the lowest valleys in the district. It is almost exclusively confined, so far as we have observed, to the north-western portion of Madison, and the contiguous parts of Washington county. We suppose the whole area covered by this formation does not exceed 120 or 130 square miles; but we have not observed its southern limits. It may extend in that direction further than we have reason to believe it does, and may possibly even have a subterraneous connexion with that talcose variety of granite discovered by Dr. James, on the Washita. The marked dissimilarity in the two varieties is not, perhaps, a valid objection to this supposition, when we consider the different aspects which some of the ranges of our American granites assume, examined at distant points."† This granite is without any marks of stratification. Its structure is fine grained. Its colour, which is imparted by the predominance of feldspar, is a flesh red. Both the quartz and mica form but a comparatively small portion of the mass, and the mica exists in the least abundance.

* Expedition to the Rocky Mountains, vol. iii. p. 310.

† Schoolcraft's Travels.

Very frequently the latter mineral is entirely wanting through considerable portions of the mass, and the rock is made up wholly of quartz and feldspar. This rock is traversed by veins of greenstone, which are chiefly porphyritic, and in some places beautifully so.

In connexion with the granite of the Washita is found a stratum of clay-slate, another of transition sandstone, but neither of them of any great extent. Near St. Michael's, Mr. Schoolcraft affirms the existence of the metalliferous or transition limestone. The hot-springs of the Washita issue from the clay-slate, and, if we may judge from the inclination of the strata, and the distance at the surface from the granite of the cove, we may conclude that a very large mass of clay-slate is interposed between the surface of the granite and the point at which the springs rise. This, however, it is not possible to ascertain. The hottest springs on the globe rise from beneath or within the granite, and it is not improbable that this rock may approach near the surface at many points in the Ozark Mountains where it has not yet been uncovered. The slate rock about the hot springs is highly inclined, often flinty in its composition, and, as far as has been hitherto observed, it contains no organic remains. It is traversed by large upright veins, filled usually with white quartz, contrasting strongly in colour with the dark blue of the slate. The mountains contain vast beds of limestone, which, though decidedly secondary, has in many parts so peculiar a crystalline appearance as to be easily mistaken for primitive. The recent fracture is uneven, distinctly crystalline, and much like that of many moderately fine-grained granites. Careful examination shows, that in many instances the most minute particles visible under a lens have assumed the rhombic form so common to the carbonate of lime; these crystalline particles vary greatly in size, and are sometimes half an inch across. In the interior of the casts of animal remains, they are sometimes less distinct than in parts of the rock where no such remains are discovered. These vast beds of sparry limestone, made up almost exclusively of deposits from chemical solution, would seem to have been formed during periods when great tranquillity prevailed in the waters from which they were deposited. They alternate with limestones of the common earthy and compact varieties. The sandstones of this small group of mountains appear under almost every variety of character, but in most of them, as far as hitherto examined, are discovered traces of coal, or of those minerals and organic remains which usually accompany it. A conspicuous feature in the sandstones about the central and western portions of

the region under consideration, is the great proportion of mica, in large scales, which enters into their composition. Fragments of the sand-rock about the mouth of the Poteau might be mistaken for mica slate. This mica is rarely, if ever, of that dark coloured variety which prevails in the Chippewayan Mountains; and in the other materials of these aggregates there is a manifest want of resemblance to those mountains. Another peculiar variety of sandstone occurs in connexion with the sulphuret of lead, at the old mines of St. Michael, and at many places in that vicinity. This bears apparently the same relation to the common sandstones, as the crystalline limestone above mentioned does to the earthy varieties, and it alternates with and passes into the common rock in a similar manner. Its particles are crystalline, and appear to remain undisturbed in the position in which they were originally deposited from solution in water. Nevertheless, the aggregate is manifestly secondary, and embraces the relics of many organized beings, as is common in the other secondary rocks.

There appears reason to think that these mountains are entirely secondary. Compact limestone contains the lead ore, and is here associated with an extensive deposit of fluete of lime. None of this mineral, however, has yet been discovered in this place; the whole of it is in the form of detritus, showing evident marks of abrasion and attrition. Besides several varieties of sandstone, shell limestone and oolite were observed at this point. Though the country stretching northward to Lake Superior becomes more level, and is not distinguished by any considerable physical peculiarities, its geological and mineralogical character identify it with that which we have just noticed. Numerous specimens of minerals brought from the Upper Mississippi and the Illinois rivers have a peculiar resemblance to similar minerals met with in the territory south of the Missouri. From these resemblances, and the corroborating testimony of all the accounts received concerning that country, rich in mines, which lies along the eastern side of the Upper Mississippi, there is reason to believe that a continuation of the Ozark Mountains or at least of a region similar in mineralogical features, extends from the confluence of the Missouri northward, to the sources of the Wisconsin and the Ontonagon river of Lake Superior. North of the Missouri the country is very little elevated, but aside from this it appears to possess all the peculiar features of the region we have been considering. The sandstones, the limestones, and other rocks, have a striking resemblance.

Of the Black Mountains, in the north-western part of the Mississippi Valley, only enough is known to mark them out as of a distinct geological structure from the rest of the valley. They appear to consist entirely of sandstone lying horizontally, and to be destitute of any mineral productions of value. The remaining portions of the great valley may now be easily disposed of. In the north, between the Black Mountains and the central district, is a wide tract containing the course of the Missouri, marked by Dr. James as alluvial. The same appellation he gives to a space on the west of the Ozark Mountains, between them and the Chippewayan sands, and to the country on both sides of the Lower Mississippi. We think that the application of this term may admit of considerable modification and improvement, as it seems to us to be sometimes confounded with diluvial, if not with tertiary formations. Such formations appear to exist on the line of the Mississippi, and will engage our attention hereafter.

We must now turn our attention to the region which lies to the eastward of the Apalachian Mountains. The eastern front of this range we have already stated to consist of primitive rocks, and we have mentioned that so far south as the Hudson these rocks reach the sea; from this point they take an inland course, and leave a considerable tract of land between them and the ocean all the way to the Mississippi. On this side there is no appearance of any rocks of the transition class; the primitive terminates abruptly, and through its whole length is skirted by an extensive series of beds of shell-limestone, marl, clay, sand, and gravel, constituting what has been described in our geographical department as the Atlantic Slope. This class of strata begins at Long Island, becomes gradually wider as it extends through the middle and southern states, forms the whole of Florida, and crosses the Mississippi, where it meets the secondary formation of that valley, and sends up a tongue for a considerable distance along the sides of that river. We may here notice the extended granitic ridge which forms the boundary between the primitive and secondary regions, and which has been considered as one of its most remarkable features. It commences as far south as Georgia, and extends to New York; whence it seems to pass into Long Island, and under the Sound into Connecticut. It is in some places concealed by the soil; but it appears distinctly at the riverfalls, and is particularly rugged where it crosses the Susquehannah. It has been conjectured that this ridge was the ancient line of the seacoast.

The entire region to the eastward of the primitive

was long spoken of as alluvial; but a more careful examination has shown that it comprehends, not only a large extent of tertiary formations, but some which are decidedly secondary. From an elaborate investigation of this district by Dr. Morton, of Philadelphia, more particularly directed to the characteristic features of its organic remains, there appears decisive evidence of this fact. These secondary strata are not, however, calcareous, like those on the west of the Apalachian Mountains; but they consist of beds of sand and clay analogous to the iron sand, green sand, and chalk marl, or gault, of our own country. Dr. Morton calls it the ferruginous sand formation. The tract occupied by it encloses nearly the whole of the marl region of New Jersey, so far, at least, as it has hitherto been explored; though there is reason to believe that this formation occupies a great proportion of the triangular peninsula south of the Raritan river. Much of the ferruginous sand, however, is overlaid by deposits of clay containing lignite, which have been referred, with apparent correctness, to the plastic clay formation. Above these clay beds is an almost uniform covering of gray sand; though in many places the marl, with its peculiar fossils, is found immediately beneath the soil. In Maryland commences a vast deposit of sand and clay, extending along the coast to the Mississippi; this tract abounds with tertiary fossils, which appear chiefly to belong to the upper marine formation of the European geologists. The secondary strata are occasionally met with beneath it, and sometimes approach so near the surface as to be readily identified by their fossils. It is therefore reasonable to suppose that the beds of ferruginous sand extend nearly the whole length of the Atlantic frontier of the United States south of Long Island, though for the most part concealed by the different members of the tertiary class.

In all its localities this formation has been identified by similar genera and species of organic remains, though all the genera do not exist in every locality. The predominant constituents of the varieties of marl are silex and iron. They often contain beds of a dark bluish, tenacious clay; sometimes this clay is mixed with the marl, forming marly clay. Again the marl is seen of a yellowish brown colour, friable, or compact, and filled with green specks of the silicate iron. Some of the greenish varieties are also very compact, rendering it extremely difficult to separate the fossils from their matrix. The friable blue marls often contain a large proportion of mica in minute scales. Other localities present beds of silicious gravel, (turtia? of the French,) the pebbles varying from the size of coarse sand to one or two

inches in diameter. These are cemented together by oxide and phosphate of iron, and contain the same fossils as the earths already described. The most striking instance of this kind is at Mullica Hill, in New Jersey. Similar mineralogical appearances, but without fossils, occur in the lower beds of the Chesapeake and Delaware canal. At the latter place is also found a friable silicious sand, of a bright green colour, answering to the glauconie sableuse of Brongniart: also a fine, pure white sand, with abundance of lignite; and extensive beds of brown and yellow ferruginous sand, more or less argillaceous. Some of the blue marls which effervesce strongly with acids, contain but five per cent. of lime. There are also large beds of calcareous marl, containing at least thirty-seven per cent. of lime, the remainder being silex, iron, &c.: a hard, well-characterized, sub-crystalline limestone, filled with zoophytes. All these pass by insensible degrees into each other, exhibiting an almost endless variety of mineralogical character. The mineral substances found in these beds are, iron pyrites in profusion; chert, (in the calcareous beds,) amber, retinasphalt, lignite, and small spherical masses of a dark green colour and compact texture, apparently analogous to those found in the green sand of France. Mr. Hayden suggests that these may be the discolites of the Abbe Fortis; their structure, however, does not appear to be organic, although they often have a shark's tooth, or a small shell, for a nucleus. Larger spherical bodies also occur, resembling the nodules of clay iron-stone so common in some parts of England. One of the most abundant mineral products of these beds is lignite. It is found at the deep cut of the Chesapeake and Delaware canal in almost every variety, from charred wood to well-characterized jet. Sometimes it is in small fragments, and again it occurs in large masses, presenting the trunks and limbs of trees thirty feet in length, and perforated in every direction by the teredo. That these lignites belong not to the tertiary deposits, but to the ferruginous sand, appears to be the more probable, inasmuch as the lignite beds of Delaware are found to be subordinate to strata replete with extinct multilocular univalves, and other secondary remains. The extensive occurrence of this formation, so closely connected with chalk in Europe, renders the absence of the chalk itself still more remarkable.

The tertiary formations, as we have just seen, occur largely on the Atlantic Slope, but they are by no means confined to it: they overlie the secondary strata to a great extent on both sides of the mountain chains. Marly clay (London clay) is one of the most

universal of all visible strata. It is the common clay of all North America. Lieut. A. B. Eaton traced it from the mouth of the Ohio to New Orleans, mostly covered with Bagshot sand. It always effervesces with acids when dry, and always contains muriate of lime; consequently all wells dug in it yield hard waters. Sulphate of magnesia is not uncommon in it, and in some localities it contains small quantities of muriate of soda. Bagshot sand and crag are next in extent to the marly clay, and generally overlie it. The sand and crag often pass into each other, and often alternate; but if they are to be treated as distinct, probably the crag should be considered as uppermost. The plastic clay formation is stated to appear very distinctly on the west side of Lake Champlain, and at various points, from Martha's Vineyard to the eastward of Long Island, to Florida and the Mississippi. The silicious limestone of Georgia is asserted to be decidedly contemporaneous with the calcaire silicieuse of the Paris basin. In Virginia the marly or London clay is found, and the sands of the Upper Marine formation are conceived to occur in the same state, and in Staten Island.

Of the geology of the region west of the Chipewyan Mountains nothing certain is known. The chains which stretch nearer to the Pacific are lofty, and are presumed to be primitive. Mr. Scrope represents the mountains which border the Pacific Ocean as volcanic.

Having taken this general survey, before we proceed to further details it may be desirable to make a few observations respecting the influence of American geological facts upon existing geological theory. It was soon found that geological researches were made with much greater facility in America than in Europe, especially in the region of the secondary strata. The immense extent over which they could be traced, the undisturbed condition in which they are found, and their generally horizontal position, afforded valuable facilities for efforts of generalization and system. The absence of the newest floetz-trap rocks, (which partially and irregularly cover all other formations, thereby breaking the continuity of the strata,) and of the effects of the violent convulsions so frequent in the vicinity of this disputed formation, unquestionably facilitate geological researches. A second cause, producing much more extensive effects, may perhaps be found in the greater number and magnitude of the changes that have been effected in the different classes of rocks on the European continent, since their original formation; either by the effect of water during a long course of time, partially,

washing away the superincumbent strata most liable to decomposition, and leaving the more hard and durable parts of the same rocks in their original positions; or by the long and continual action of rivers wearing deep beds, and exposing to view the subordinate strata, giving to the whole the appearance of a confused and interrupted stratification, though it might have been uniform and regular in its original state. Rivers, likewise, by undermining, throw immense masses out of their place, and create a disorder and confusion not easily unravelled. The rivers in North America have not generally cut so deep into the different strata, either in the mountains, or during their course through the level country, as materially to derange the stratification; nor do we find those immense and inaccessible precipices, which render the prosecution of geological researches almost impossible. Broken detached masses of one formation covering the tops of mountains, with their sides or foundation composed of different classes of rocks, seldom occur; and where any irregularity or apparent confusion takes place, the vicinity generally admits of a sufficient examination of the surrounding strata, to account for the accident without affecting the general arrangement. A third cause of the facility of geological observations on this continent, may be traced in the fact, that the whole continent east of the Mississippi follows the arrangement of one great chain of mountains. Europe, on the contrary, is formed of five or six chains of mountains, all following different laws of stratification, and frequently interrupting each other; which increases the difficulty of arrangement, and augments the apparent confusion.

The effect of the opening of this field of observation has been striking and important. It has been to confound and set at naught every previous attempt at the determination and arrangement of general strata. American geologists may be said to be continually laughing at the mundane systems which men of science on this side of the Atlantic have been constructing from their survey of such a mere corner of it as the continent of Europe; and European geologists themselves have acknowledged, that general strata must be determined in America. The absence of the chalk forcibly illustrates this; the chalk being not only a very prominent feature in our geological structure, but the grand point of division between the secondary and tertiary formations. The English oolite has not its fellow in America. It has come to be affirmed by Professor Eaton, that the old red sandstone is not a general stratum, and to be questioned whether primitive clay slate has any existence at

all;* while Mr. Maclure informs us, that, though the primitive formation contains all the variety of rocks found in the mountains of Europe, yet neither their relative situation in the order of succession, nor their relative heights in the range of mountains, correspond with what has been observed here. The order of succession from the clay slate to the granite, as well as the gradually diminishing height of the strata, from the granite through the gneiss, mica slate, and hornblende rock, down to the clay slate, is so often inverted and mixed, as to render the arrangement of any regular series impracticable. It would have made amends for this subversion of existing systems, if men of science in America had been able to form any satisfactory generalization themselves. This is as yet, however, far from being the case. With much of positive assertion, every thing is controversy and confusion; every thing, at least, but the observation and accumulation of facts, which is going on with some rapidity and diligence, and which, it would seem, must be carried to a much greater extent before any hope of successful generalization can be entertained. Notwithstanding all the uncertainty we have described, however, some important general facts are either confirmed or established, and of these we shall endeavour to give a condensed account.

The primitive, and, perhaps it may be added, the transition rocks of the United States, bear an almost perfect resemblance, in structure and general character, to those of Europe. They constitute the whole mass of the mountains, with the same declination, irregularity, and apparent disruption and dislocation of the strata. The granite is in beds and veins, with only such equivocal appearances of stratification as have been detected elsewhere. The Apalachian resembles several of the European chains of mountains, in having the secondary formation principally on the north-western side. Among the peculiarities of this primitive range is its comparatively low elevation; only one portion of it, the White Hills, reaching six thousand feet above the level of the sea, a far lower point than is reached by any other considerable mass of primitive rocks at present known. Connected with this is also the very low level at which the same rocks are found in the northern states, especially on the banks of the river Hudson, where the tide runs between precipitous banks of granite, greenstone, &c., entirely through the mass of primitive and transition rocks into the secondary, to a distance of a hundred and fifty miles. It arises from the same geological

* The existence of primitive clay slate is distinctly affirmed by Mr. Hitchcock, on the Connecticut, and by Professor Dewey. *Silliman's Journal*, vol. ii. p. 248, vol. vi. p. 36.

character of this range, that the ridges of the mountains do not form the dividing high lands of the waters ; but that in many cases, as with the rivers which discharge themselves into the Chesapeake, the streams rise beyond the mountains, and find avenues which permit them a clear passage, often at right angles to the chain which they penetrate. The immense depth of some of the lakes, ascertained to be in some places as much as twelve hundred feet, and in others being hitherto unfathomable, belongs to the same class of indications. We feel constrained to associate with these circumstances the comparatively small quantity of unstratified rocks found in this region. We have already seen that one half the primitive is gneiss ; and when allowance is made for mica slate, talc slate, and other stratified primitive rocks, it will follow that granite is but in small proportion. Porphyry and serpentine do not appear to be abundant. Greenstone occurs, as also basalt ; but, as we have seen, the newer trap rocks are almost if not entirely wanting. It remains to be added, that no traces whatever exist of volcanic action, that is to say, of recent volcanic action, or of any other than must have occurred if greenstone and granite are of igneous origin. All these circumstances may be considered as confirming the supposition, that the mountain masses generally have been upheaved by convulsive action ; and as indicating that the impulses which raised the Apalachian chains were, if not in the first instance less powerful, yet less frequently repeated, than in most other cases. Hence the small elevation of their highest summits ; hence the deep notches which allow the transverse passage of great rivers ; and hence also that remarkable tide-valley occupied by Hudson River. The Chippewayan Mountains, contrasted as they are with the Apalachians in their elevation and other physical features, are equally so in their geological structure. The unstratified rocks almost exclusively prevail ; the newest floetz-trap rocks also are found ; and every indication of violent action of greater power or more frequent repetition.

Another general fact respecting the newer trap formations is strongly indicated by their entire absence from the immense secondary formation of the United States, taken in connexion with the horizontal position and undisturbed character of the stratification. Here is no dislocation, and no trap. . . . Wherever there is trap, as in Europe, there is dislocation and disorder. It seems to follow, therefore, that trap rocks have had their origin, not in the causes which formed the secondary strata, but in those which have disturbed them.

VOL. II.—Nos. 21 & 22. G

Whether the vastness of the field which is open to geological inquiry in the United States will materially facilitate the determination of general strata, or whether, beyond the primitive, there are really any such, may be a matter of doubt. We now turn to the more certain and yet disputed ground of the actual arrangement of the American strata themselves. The cutting of the canal from Albany to Lake Erie afforded a valuable opportunity for investigation, of which Professor Eaton has diligently availed himself, in order to form a scheme of general strata such as the structure of the North American continent would indicate ; and we can not do better for the information of our readers, than present to them his views on the subject.* In doing so, it will be necessary to allow him to employ his own nomenclature, which, however, will be easily understood, whether adopted or not.

Geological Nomenclature, exhibited in a Synopsis of North American Rocks and Detritus, by Professor Amos Eaton.

CLASSES OF ROCKS.

CLASS I. *Primitive Rocks* ; being those which contain no organic relics or coal. See Fig. 1, 2, 3, 4, 5, and 6.

CLASS II. *Transition Rocks* ; being those which contain marine organic relics only, and, in some localities, anthracite coal. See Fig. 7, 8, 9, 10, 11, and 12.

CLASS III. *Secondary Rocks* ; being those which contain, in some localities, dry-land or fresh-water organic relics, as well as marine or bituminous coal. See Fig. 13, 14, 15, 16, 17, 18, and 19.








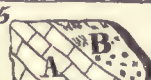




CLASS IV. *Superincumbent Rocks* ; being those hornblende rocks which overlay others without any regular order of superposition, supposed to be of volcanic origin. See Fig. 20.

CLASSES OF DETRITUS.




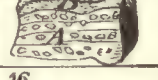




CLASS V. *Alluvial Detritus* ; being those masses of detritus which have been washed into their present situation. See Fig. 21, 22, 23, and 24.




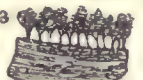


CLASS VI. *Analluvial Detritus* ; being those masses of detritus which have not been washed from places where they were first formed by the disintegration of rocks. See Fig. 25 and 26.

* See two papers by Professor Eaton, in Silliman's Journal, vol. xiv.

	GENERAL STRATA AND SUBDIVISIONS.	VARIETIES.	IMBEDDED AND DISSEMINATED.
12 	SECOND GRAYWACKE. B. <i>Rubble.</i> A. <i>Compact.</i>	Red sandy, (old red sandstone?) Honeslate. Grindstone.	Manganese. Anthracite.
11 	METALLIFEROUS LIMEROCK. B. <i>Shelly.</i> A. <i>Compact.</i>	Birdseye marble.	
10 	CALCIFEROUS SANDROCK. B. <i>Geodiferous.</i> A. <i>Compact.</i>	Quartzose. Sparry. Oolitic.	Semiopal. Anthracite. Barytes. Concentric concretions.
9 	SPARRY LIMEROCK. B. <i>Slaty.</i> A. <i>Compact.</i>	Checkered rock.	Chlorite. Calc spar.
8 	FIRST GRAYWACKE. B. <i>Rubble.</i> A. <i>Compact.</i>	Chloritic.	Milky quartz. Calc spar. Anthracite.
7 	ARGILLITE. B. <i>Wacke slate.</i> A. <i>Clay slate.</i>	Chloritic. Glazed. Roof-slate. Red. Purple.	Flinty Slate. Anthracite. Striated quartz. Milky quartz. Chlorite.
6 	GRANULAR LIMEROCK. B. <i>Sandy.</i> A. <i>Compact.</i>	Verd-antique. Dolomite. Statuary marble.	Tremolite. Serpentine. Chromate of iron.
5 	GRANULAR QUARTZ B. <i>Sandy.</i> A. <i>Compact.</i>	Ferruginous. Yellowish. Translucent.	Manganese. Hematite.
4 	TALCOOSE SLATE. B. <i>Fissile.</i> A. <i>Compact.</i>	Chloritic.	Octahedral crystals of iron ore. Chlorite.
3 	HORNBLLENDE ROCK. B. <i>Slaty.</i> A. <i>Granitic.</i>	Greenstone. Gneis- soid. Porphyritic. Sienitic.	Granite. Actynolite. Augite.
2 	MICA SLATE. B. <i>Fissile.</i> A. <i>Compact.</i>		Staurolite. Sappare. Garnet.
1 	GRANITE. B. <i>Slaty, (gneiss.)</i> A. <i>Crystalline.</i>	Sandy. Porphyritic. Graphic.	Schorl. Plumbago. Stea- tite. Diallage.

TOPOGRAPHY OF THE UNITED STATES.

	GENERAL STRATA AND SUBDIVISIONS.	VARIETIES.	IMBEDDED AND DISSEMINATED.
20 	BASALT. B. <i>Greenstone trap,</i> (columnar.) A. <i>Amygdaloid,</i> (cellular.)	Granular. Compact. Toadstone.	Amethyst. Chalcedony. Prehnite. Zeolite. Opal.
19 	THIRD GRAYWACKE. B. <i>Pyritiferous grit.</i> A. <i>Pyritiferous slate.</i>	Conglomerate, (breccia.) Calcareous grit. Red sandstone, (old red sandstone?) Red wacke. Argillaceous.	Grindstone. Hornstone? Honeslate. Bituminous shale and coal. Fibrous barytes.
18 	CORNITIFEROUS LIMEROCK. B. <i>Shelly.</i> A. <i>Compact.</i>		Hornstone.
17 	GEODIFEROUS LIMEROCK. B. <i>Sandy.</i> A. <i>Swinestone.</i>	Fœtid.	Snow-gypsum. Strontian. Zinc. Fluor Spar.
16 	LIAS. B. <i>Calciferos grit.</i> A. <i>Calciferos slate.</i>	Shell grit. Argillaceous. Conchoidal.	Shell limestone. Vermicular. Water cement. Gypsum.
15 	FERRIFEROUS ROCK. B. <i>Sandy.</i> A. <i>Slaty.</i>	Conglomerate. Green. Blue.	Argillaceous iron ore, (reddle.)
14 	SALIFEROUS ROCK. B. <i>Sandy.</i> A. <i>Marl slate.</i>	Conglomerate. Gray-band. Red sandy. Gray slate. Red slate.	Salt, or Salt-springs.
13 	MILLSTONE GRIT. B. <i>Conglomerate.</i> A. <i>Sandy.</i>		Coal?

	GENERAL DEPOSITS AND SUBDIVISIONS.	VARIETIES.	IMBEDDED AND DISSEMINATED.
26 	SUPERFICIAL ANALLUVION. B. <i>Granulated</i> , (from graywacke.) A. <i>Clay loam</i> , (from argillite.)		Various boulders. Pebbles.
25 	STRATIFIED ANALLUVION. C. <i>Lias</i> . B. <i>Ferriferous</i> . A. <i>Saliferous</i> .		Gypsum. Shell limestone. Reddle.
24 	POSTDILUVION. B. <i>Sediment</i> . A. <i>Pebbles</i> , (in the rocky bed of a river.)		Various boulders. Trees and herbs. Fish bones and shells. Works of art.
23 	ULTIMATE DILUVION, (on crag in old forests.)	Yellowish gray. Grayish yellow.	
22 	DILUVION, (in an antediluvial trough.)	Quicksand. Gravel. Vegetable mould.	Boulders. Trees and leaves. Bones and shells. No works of art.
21 	ANTEDILUVION. C. <i>Bagshot sand and crag</i> . B. <i>Marly clay</i> . A. <i>Plastic clay</i> .	Quicksand. Yellow sand. Hardpan. Brick earth.	Puddingstone. Burrstone. Bog ore. Shell marl. Indurated marl. Septaria?

The following TABULAR ARRANGEMENT of the ROCK FORMATIONS along the CONNECTICUT, after the method of Conybeare and Phillips, is given by Mr. Hitchcock.*

I. INFERIOR ORDER.

		Rocks observed in contact with those in the leading column.	
Mutually Interstratified, and without any regular order of succession.	1. Granite	Common	Sienitic Granite.
		Porphyritic	Gneiss.
		Graphic	Hornblende Slate.
		Pseudo-morphous	Mica Slate.
			Serpentine.
			Limestone, (No. 7.)
			Diluvium.
			Alluvium.
			Granite.
			Hornblende Slate.
2. Sienite, or Sienitic Granite			Primitive Greenstone.
			Diluvium.
			Alluvium.
			Granite.
			Hornblende Slate.
3. Gneiss	Common		White Granular Limestone.
	Glandulous		
			Mica Slate.
			Seatite.
			Diluvium.
			Granite.
4. Hornblende Slate			Sienitic Granite.
			Gneiss.
			Mica Slate.
			Diluvium.
			Granite.
			Gneiss.
			Hornblende Slate.
			Limestone, (No. 7.)
			Argillite.
			Chlorite Slate.
5. Mica Slate			Greenstone Slate.
			Serpentine.
			Seatite.
			Old Red Sandstone.
			Coal formation.
			Diluvium.
			Alluvium.
			Mica Slate.
6. Talcose Slate			Chlorite Slate.
			Granite, (in veins.)
7. Limestone, or a Gran. Aggregate of Siliceous, Carb. Lime and Mica			Mica Slate.
			Argillite.
			Talcose Slate.
			Mica Slate.
			Argillite.
8. Chlorite Slate			Verd Antique.
			Primitive Greenstone.
			Diluvium.
			Alluvium.
			Gneiss.
9. Seatite			Mica Slate.
			Serpentine.
			Granite.
			Mica Slate.
10. Serpentine			Granular Limestone.
			Seatite.

11. Verd Antique

12. Prim. Greenstone } Unstratified Greenstone Slate.

The order of succession of the 7 preceding rocks is very variable and uncertain.

II. SUBMEDIAL ORDER.

13. Argillite

III. MEDIAL ORDER.

14. Old Red Sandstone { Common Conglomerated

15. Coal Formation

16. Sec. Greenstone

17. Diluvium

18. Alluvium

Rocks observed in contact with those in the leading column.

Primitive Greenstone.
Chlorite Slate.
Mica Slate.
Chlorite Slate.
Sienite.
Verd Antique.
Old Red Sandstone.
Coal Formation.

Mica Slate.
Limestone, (No. 7.)
Primitive Greenstone.
Chlorite Slate.
Old Red Sandstone.
Diluvium.
Alluvium.

Granite.
Mica Slate.
Argillite.
Primitive Greenstone.
Secondary Greenstone.
Coal Formation.
Diluvium.
Alluvium.

Granite.
Gneiss.
Mica Slate.
Old Red Sandstone.
Primitive Greenstone.
Secondary Greenstone.
Diluvium.
Alluvium.

Granite.
Old Red Sandstone.
Coal Formation

IV. SUPERIOR ORDER.

Above most or all of the preceding formations.

Above most of the preceding formations.

* Silliman's Journal, vol. vii. to which we must refer for more detailed information.

The valley of the Mississippi, presenting an area of 1500 miles from east to west, and 1200 from north to south, occupied by extended strata of the secondary class, is an object too interesting not to have set speculation in activity; more especially as connected with the immense lakes in the interior of the North American continent. When treating of the physical geography of this interesting country, we gave an account of the fact that the lakes are not divided from the Mississippi valley by mountains, or by any considerable highlands. It has been accordingly suggested by Mr. Maclure, and Professor Cleaveland and others seem disposed to concur with him, that all this extent of secondary rocks, together with the area of the present lakes, and a large space to the northward of them, was once the bottom of a much larger lake or sea, and that the waters of it have been gradually discharged by the Mississippi, the Hudson, and the Saint Lawrence, the only rivers which have broken through the mountains once surrounding this immense basin of water.* Without being prepared to propose any more plausible conjecture, we cannot express any satisfaction in this, which seems to us to be incumbered by the obvious fact that one side of this supposed basin appears never to have been inclosed by mountains at all. Between the southern extremity of the Apalachian chains and the corresponding portion of the Chippewyan range intervenes a space of many hundreds of miles, affording no barrier which could inclose the imagined waters; or if the Ozark Mountains be considered sufficient for this purpose, the same can not, at all events, be imagined of the level and sandy tract between them and the Chippewyan. Allowing the valley of the Mississippi to have been once the bottom of the sea, the conjecture of its elevation by subterraneous forces appears to us less difficult than that of its drainage by its present rivers.

The evidences of diluvial action on the North American continent are very ample, and on the same magnificent scale with the other geological phenomena. The following description of them in one locality is given by Professor Eaton:—"I find a diluvial trough, extending from Little Falls, along the Erie Canal, one hundred and sixty miles. After numerous examinations, I feel confidence in the following description. It is as it would have been, the whole having been filled to its present level with marly clay, covered with Bagshot sand and crag, generally overspread with a layer of shell marl, had it then been cut up, by a strong current running

from Little Falls westerly, into islands, ridges, embankments, &c.; and after these channels were thus made, had they been filled with a confused mass of gravel, sand, clay, trees, leaves, fresh-water shells, &c. Whether the appearances originated in this manner, or in any other way, such is the present aspect. I caused diggings to be made, to the depth of forty or fifty feet; and in one case a well was dug one hundred and eighteen feet deep. The American hemlock (*pinus canadensis*) appeared everywhere to the greatest depth of this deposit; also, immense quantities of fresh water-shells. They were chiefly of the genus *Mya*, (*Unio* of Bruguières,) and *Helix*, (*Lymnæ* of some authors.) The insulated remains of the stratified antediluvial deposits present the marly clay, Bagshot sand and crag, beautifully crowned with almost snow-white shell marble, a fine yellowish soil, and vegetable mould, or peat. I may add, that nothing is more manifest, than that these deposits could not have been made by any existing cause." In addition to deposits of gravel, boulders are likewise extensively found. Along the Connecticut in the primitive region, large boulders in great numbers are commonly found, removed not many miles from the spot whence they were derived. Stragglers of this description may indeed be found almost everywhere, and among all the rocks none seems to be more scattered than granite, though perhaps the numerous beds and veins of this rock found almost everywhere may account for this: but in general along this river, the character of the rolled masses corresponds to the rock in the place underneath them; that is, the greatest number of the loose stones are of the same description as the rock that underlies them. But to this there are many exceptions—a most remarkable one occurs a few miles west of New Haven in Woodbridge and Milford, where the surface is covered with rolled masses, sometimes quite large, of primitive and secondary greenstone, mica slate, gneiss, granite, and almost every other rock, except that which is in place, viz. chlorite slate, or argillite. In many places which are highly mountainous, the geest (diluvium) is so abundant as to occupy most of the surface; the subjacent rock rarely appearing, as in the east part of Plainfield and in Shutesbury. The diameter of the loose fragments varies from an inch to twenty or even thirty feet, and they are usually rounded, indicating attrition. Some of the highest of these boulders are found insulated on the pinnacles of the mountains. Bordering on the Ohio River, in the state of Ohio, is a hilly region, which covers perhaps one third part of the surface of the state

* Mr. Maclure's paper may be seen in Silliman's Journal, vol. vi. p. 98. It is to us altogether unsatisfactory.

Above these hills towards Lake Erie, boulders of primitive rocks are found. That they are out of place in a region decidedly secondary and alluvial no one can doubt. They are water-worn, rounded, and smoothed, exactly like the pebbles in alluvial soils, and like them have been abraded by the stones with which they have come in contact, aided by the waters in which they have been immersed. That they have been brought thither from the north, north-west, and north-east, appears from the following considerations:—1. They exactly resemble the primitive rocks found, in several instances, on the shores of Lake Superior, and on the north side of Lake Ontario. 2. In proceeding northwardly from the hilly region above mentioned, they increase both in number and size. They have been seen on the northern side of the hilly region about Hillsborough, in Highland county, but never on the southern side of this region, except in the form of pebbles, in the beds of rivers passing through the country where the larger masses exist. These rocks abound most in valleys, which now are or appear to have been the beds of streams. Thus, in the bed of the Whetstone, below the town of Delaware, large rocks of this class are seen reposing on limestone. The latter rock is *in situ*, and abounds in shells. The stream (the Whetstone) has worn itself a channel, in some places very deep, through clay slate, until it has been checked in its progress downwards by a very hard, compact limestone. In the barriers (improperly so called) in Madison county, none but primitive boulders are found, and they are used for chimneys, and for the underpinnings of buildings. They are sometimes used for mill-stones, and one fragment was so large as to make three mill-stones. Primitive rocks are found in Indiana and Illinois; north of their hilly region, as in Ohio; south of Lake Ontario. They are also found in the state of New York, in a country geologically similar in all important respects to Ohio, Indiana, and Illinois.

In reference to the stratum which, in his tabular arrangement given above, Professor Eaton calls *ultimate diluvion*, he makes the following statement: "All elevated plains from which the original forests have not been removed, and whose surfaces have not been disturbed, are now covered, immediately beneath the vegetable mould, with a mantle of fine earth, finest at the surface, and this is everywhere nearly similar, and unlike the stratum upon which it rests. It is most perfect, as far as I have examined, upon that variety of crag which American agriculturists call hardpan. Almost the whole of the vast tract of land called Hardenburg patent, west and

south-west of Catskill mountains, containing several million acres, and most of the high ranges in New England, and the lands west of Lake Champlain, present a most perfect example of the hardpan crag covered with this ultimate diluvion." Professor Eaton is the only geologist who has thought this stratum worthy of a distinct enumeration, and seems doubtful whether any analogous fact has been traced by others; but we apprehend it entirely harmonizes with European observation, though on this side of the Atlantic such matter may be less extensively found. It appears to be identical, for example, with the fine earth lying above the pebbles in the diluvial hollows of the rock of Gibraltar.*

Striking indications of a similar kind are found in the great interior lakes. Of the north-west portion of Lake Huron, which exhibits many evidences of change and convulsion, Dr. Bigsby gives the following account:—The original form of the bed of the lake may be described as a triangular valley of great extent, divided in an easterly direction by the Manitoulin Ridge into two unequal parts, the northern being rocky and of variable elevation, and the southern more uniform in its level, and generally lower. In its present form, the bed of Huron Lake is covered with the debris of distant countries; its rocks are furrowed and abraded; its loftiest heights overthrown, (of greenstone, one of the most tenacious of minerals, as in the narrows of St. Joseph,) separating large tracts from the Main; and finally, passages, from ten to twelve miles wide and ten long, are forced in the Great Manitoulin barrier itself. These violences, and particularly the first and last, indicate a more general and powerful agency than that of a gradual accumulation of waters of Lakes Huron and Superior, whose united surplus requires only an outlet of three hundred yards in breadth, (River St. Clair,) in place of the four Manitoulin detours. The effect of a gradual accumulation of water would have been to have filled the north division of Lake Huron, and, in the end, to have inundated the lower grounds on the south and east by an embouchure at the point of least elevation in the Great Ridge. Dr. Bigsby is inclined to the opinion that an enormous body of water (a "debacle") has rushed over these countries, swept from distant lands the colossal fragments of rock so frequent in the Lake, and formed the breaches called the detours; perhaps at the same time when the passages of the Hudson and Shenandoah were opened, and the heights of Quebec and the marshes of Montreal were covered with the ruins of annihilation.

* Buckland's *Reliquiæ Diluvianæ*.

ted mountains. These fragments are incredibly numerous in Lake Huron, and may be divided into two geological classes, the foreign and the native. The former are the more plentiful, and are round and smooth. They are seen everywhere, but are collected principally in the interior of the coasts and islands, either in confused heaps, or in parallel ridges, and crowning the highest acclivities in great numbers. The fragments are of various dimensions. They belong almost exclusively to the older orders of rocks, and are therefore of a northerly origin. Granites, gneiss, mica slate, and porphyries, prevail, of kinds which, says Dr. Bigsby, "I never saw *in situ*, although I have skirted the north shore for two hundred miles, and have traversed the wildernesses to the east-north-east for six hundred miles. Mica slate I never met with in a fixed state, excepting a few strata of the black variety at the Falls des Chats, on the Ottawa." The other class is small, angular, and ragged. They are most frequent on the beaches, whither they are driven by the waves.

The formations in the United States of a character strictly alluvial are numerous and extensive, as may readily be imagined from the extent of its sea-coast, and the multitude and magnitude of its rivers. Thousands and millions of acres must have been thus formed in the course of ages, and are undoubtedly in a continued progress of formation.

From the importance which fossil remains have recently assumed in geological investigations, much interest necessarily attaches to those contained in the strata of the western world. It will be long before so vast a field of inquiry is fully explored; and, with Mr. Maclure in 1812, we may still say that it has not yet been examined with that accuracy of discrimination necessary to form just conclusions. From the various sources open to us we glean the following notices. The fossils of the transition strata consist of the ancient coralline and encrinital families, trilobites, &c., and generally resemble those of similar rocks in other parts of the globe. Entering upon the carboniferous strata of Conybeare and Phillips, we find the following account of the old red sandstone by Mr. Hitchcock:—"I found, in Deerfield Mountain, one or two specimens that belong to the petrifacta of Martin, there being a perfect substitution of a finer grained sandstone for the original substance. I found only fragments, about four or five inches long, and they appear to belong to the genus *phytolite* of Gmelin's Linnæan System, and to the species *Lignite*. They are a third of an inch in diameter, and a little flattened; and seem to agree with Professor Eaton's description of certain petrifications

found in red sandstone on the Catskill Mountain (Index, p. 211;) which he is inclined to refer to the 'tribe of naked Vermes.' Fossil bones occur in East Windsor, east parish. They belong to the conservata of Martin, and, without much doubt, to the genus *zoolithus* of Gmelin. The animal must have been about five feet in length, and lay horizontally in the rock, eighteen feet below its top, and twenty-three below the surface of the ground. The tail bone, as Dr. Porter, who lives near the spot, informed me, projected beyond the general mass containing the body of the skeleton, about eighteen inches in a curvilinear direction. This, of which that gentleman gave me a specimen, was easily distinguished by its numerous articulations. On exposure to the air, the bones begin to crumble, and lose the appearance they presented when first dug up. The rock in which these bones were found is decidedly the old red sandstone. It agrees exactly with that rock as it exists at New Haven, and to the distance of one hundred miles north from that town. The rock enclosing the bones is a little coarser than the finest varieties of this rock, and in the rock above the bones was found some moderately coarse conglomerate. Whatever doubt I had with regard to some other varieties of rock in that vicinity being the real old red sandstone, I could have no doubt in regard to this, after examining it."

From the same paper we derive an account of the organic remains in the coal formation itself. These occur at Westfield, Connecticut; at Sunderland, Massachusetts; and it is said also at some other places. At Westfield they were found, in exploring for coal, lying upon bituminous shale. Two species at least were recognised, one of which Mr. Brongniart calls the *Pakæthrissum freislebenense* of Blainville. At Sunderland impressions occur in bituminous shale, which often contains a little mica, and generally a quantity of iron pyrites, disseminated through the rock. They occur at Witmore's ferry, in the north part of Sunderland, in the bank of the river. They are found most abundant at the lowest water-mark, at which time two men, in less than half a day, dug out for me nearly fifty specimens. Sometimes a layer of semi-crystalline dark coloured carbonate of lime, less than one twentieth of an inch thick, lies between the layers of slate. The substance of the fish is usually converted into coal, the thickness of which is rarely more than one tenth of an inch in any part, and the colour is black; in some instances, however, the carbonate of lime above mentioned covers the fish, and has taken the place of the matter of the fins and scales, and their original light gray colour is

preserved so perfectly as to resemble a fish just taken out of the water. Some of these specimens appear contorted; in others, the form of the fish is wholly lost, the fins, scales, and bones, being scattered about promiscuously, as if the fish had perished in violent struggles, or the rock had been disturbed after its imprisonment. Yet, in the same specimen that contains one thus mutilated, another will appear not more than a foot distant which is whole. Specimens have been found in which the fishes (both of them distinct) lie across each other; sometimes a very thin layer of shale, and sometimes none, separating them. Another specimen, three feet long and fifteen inches wide, contains seven distinct impressions. The shale in which these ichthyolites occur, when rubbed or held in a flame, exhales a strong bituminous odour. Among the impressions hitherto obtained, are easily discoverable three distinct species that have scales. Another petrification occurs with fishes which resemble the common silver eel, (*Muraena anguilla*), or some other species of the eel tribe; the width varies from half an inch to an inch, and the length from one to two feet. The substance of the eel (if indeed it be one) is not converted into coal, but there is a substitution of shale of a finer grain, except in the head, which is coal. No fins appear, except, perhaps, in one instance, a pectoral one. Sometimes along the centre of the impression there is a small relief, answering to the place of vertebræ. The course of the impressions is usually serpentine.

The vegetable remains appear to be either the branches or roots of trees, or the relics of culmiferous plants, and therefore may be called lignites and rhizolites. They are usually converted into a thin vein of coal, similar to the fish, and they are commonly broken into pieces from an inch to two feet long. Their width varies from a mere line to two inches, and they are not jointed. They are found in abundance at the falls in Gill, and with the ichthyolites at Sunderland; the rock in which they occur at both places is hardly bituminous shale, but a grayish micaceous sandstone. A specimen of rhizolite occurs on the road side, half a mile south of Newgate prison, not less than seven or eight feet in length.

The following information respecting a different part of the country is furnished by another writer, Mr. Caleb Atwater, in the same Journal. "In the vicinity of the Ohio River, and on the waters of the Muskingum, I have carefully examined not a few of the fossil trees there existing. Among them I noticed the following, (viz.)—black oak, black walnut, sycamore or button wood, white birch, sugar maple, the date or bread-fruit tree, cocoanut-bearing

palm, the bamboo, and the dog wood; and I have in my possession the perfect impression of the cassia and the tea leaf. Of ferns I have beautiful impressions of the leaves, and of the bread-fruit tree flowers fully expanded, fresh and entire. I have specimens so perfect, and so faithful to nature, as to dispel all doubts as to what they once were. The larger trees are found mostly in sandstone, although the bark of the date tree, much flattened, I ought to say perfectly so, is found in shale, covering coal. The date is a large tree, not very tall, and having numerous wide-spreading branches. Nine miles west of Zanesville, the body of a bread-fruit tree, now turned to sandstone, may be seen; it is exactly such sandstone as that in which M. Brongniart found tropical plants imbedded in France. It contains a considerable quantity of mica in its composition. The cassia was found in such sandstone in the Zanesville canal. The bamboo is mostly impressed upon ironstone, especially the roots, and the trunks and leaves are found in the micaceous sandstone. The ironstone is sometimes apparently made of bamboo leaves, the leaves of fern, and bamboo roots. It happens frequently that the trunks of small trees and plants are flattened by pressure, and the bark of them partially turned into coal. Thus the shale often contains a bark, now become coal, and a stratum of shale in succession alternately, for several inches in thickness."

No part of the secondary strata has undergone so full and accurate an investigation as the ferruginous sand formation to the east of the Apalachian Mountains, by Dr. Morton of Philadelphia, to whose industry and care the science in this department is much indebted. As it is impossible for us to enter largely into detail, we give the following enumeration of the ascertained fossils in this formation, referring our readers for more particular information to the works mentioned below.*

CHAMBERED UNIVALVES. Ammonites: 1. *A. placena*; 2. *A. hippocrepis*; 3. *A. delawarensis*; 4. *A. vanuxemi*. Baculites. *B. ovatus*. Scaphites: *S. cuvieri*. Belemnites: 1. *B. americanus*; 2. *B. ambiguus*.—SIMPLE AND SPIRAL UNIVALVES. Dentalium, Patella, Turritella, Scapharia, Rostellaria, Natica, Bulla? Trochus, Spirorbis? Serpula, Cypræa.—BIVALVES. Terebratula: 1. *T. harlani*; 2. *T. fragilis*; 3. *T. Sayi*. Gryphæa: 1. *G. convexa*; 2. *G. mutabilis*; 3. *G. vomer*. Exogyra: *E. costata*. Ostrea: 1. *O. falcata*; 2. *O. cristagalli*? 3. *O.*; 4. *O.* Anomia. *A. ephippium*? Pecten: 1. *P. quinquecostatus*. 2. *P.* Cardium. Cucullæa: 1. *C. vulgaris*.

* Silliman's Journal, vol. xvii. p. 279; vol. xviii. p. 244. Journal of the Academy of Natural Sciences, vol. vi. p. 113.

2. *C* Mya, Trigonina? Tellina, Avicula, Pectunculus, Pinna, Teredo, Venus, Plagiostoma.—ECHINIDÆ. Spatangus, Ananchytes, Echinus, Clypeaster.—CRUSTACEA. Astacus, Cancer.—ZOO-PHYTES. Anthophyllum (*atlanticum*), Eschara (*mil-lepora*, Lin.) Flustra, Retepora, Caryophyllia, Alcyonium.—FOSSIL BONES. Mœsaurus, Plesiosaurus, Saurodon, Geosaurus, Crocodile, Whale? Shark, Tortoise. To these may be added an abundance of lignite, in various stages, from charred wood to perfect jet. We have already referred to these organic remains as sufficiently establishing the secondary character of the strata in which they are found.

With respect to the fossils of the tertiary formation, we collect the following notices. In the plastic clay and sand are found large quantities of lignite, with dispersed shells of the genera venus, ostrea, and murex, besides beds of the oyster. The silicious limestone contains splendid impressions of two or three varieties of mactra. "In the banks of James River, Virginia," says Mr. Finch, "there is a large quantity of organic remains imbedded in a bank of clay. At Richmond are found fossil triangular teeth apparently belonging to sharks, and other pieces of bone, at a distance of sixty feet from the surface. All these fossil remains are similar to those found in the London clay, and from the same spot I have seen fossil shells, similar to those which are deposited in the collection of the Geological Society in London, and which were obtained in the deep excavations at Highgate Hill." At Washington, under the mass of diluvian gravel of which the higher part of the capitol hill is composed, there is a stratum of clay, which contains many organic remains. Trunks and branches of trees are found at a distance of fifty-four feet from the surface; and further down the river, in digging wells, sharks' teeth are often met with. Near Williamsburgh, fifty miles from the Atlantic ocean, the skeleton of a large fish was discovered; amongst other parts, fragments of the ribs, and all the vertebræ, were found regularly arranged.* Here also is placed by Mr. Finch a bed of oyster shells, which extends six hundred miles in length, from ten to one hundred miles in width, and if the known measurement in one part of the line may be supposed a fair criterion, three hundred feet in thickness. The principal part of the formation is composed of shells, and it may probably be considered as the largest collection of fossils in the world. In this stratum the shells are in some situations united by a scanty calcareous cement, from which they may be readily detached; in this state

it is called by the inhabitants a soft limestone, which in the quarry is easily cut by any edge tools, and becomes harder on exposure to the air; in other parts it presents immense banks of loose shells, ten or fifteen miles in length, without the admixture of any foreign substance. This extensive formation is chiefly composed of a large species of ostrea, which is believed not yet to have been described. A specimen of it may be seen in the Philadelphia museum, twelve inches long and two and three quarters wide, and each valve from half to two and a quarter inches thick: it is said they occur larger; and on account of their great size it is proposed to call them ostrea gigantissima. The shells appear but slightly changed by their continuance in the earth, and are in many parts used for burning into lime. Respecting the shells found "in the alluvial of New Jersey," according to Mr. Maclure, or those generally, we may presume, of the secondary and tertiary strata in the Atlantic Slope, that distinguished geologist makes the following somewhat surprising observation. "Most of these shells are similar to those found in the limestone and graywacke of the transition, and equally resemble those found in such abundance in the secondary horizontal limestone and sandstone; from which it would follow, that the different classes of rocks on this continent can not be distinguished by their shells, though the different strata of the same class may be discovered and known by the arrangement of the shells found in them." This observation requires either the confirmation or the correction of subsequent inquiries.

To give our readers an idea of the fossils of more recent origin in which the United States abound, we cannot, perhaps, do better than present to them an account of one of their most remarkable localities, a morass, known by the characteristic name of Big-bone Lick, in Kentucky. This wonderful spot is a small valley situated twenty miles south-west of Cincinnati, and two from the Ohio River. In a number of places the ground is so soft for several rods, that a pole may with ease be thrust down many feet. In these soft places saline and sulphurous mineral waters rise; the earth round them is dry and solid. Here are found the bones of the mastodon, elephant, buffalo, elk, and other now unknown animals. They are in immense quantities—it is a complete charnel-house. The bones are generally under ground, and so numerous that a hole cannot be dug to the depth at which they are usually found, without striking them. They are generally bones of the buffalo. On the east side of a rivulet that runs near the principal spring they lie in a horizontal stratum, three feet below the surface, where the ground is lowest, and eleven, where the

* Silliman's Journal, vol. vii.

ground is eight feet higher. As the ground is dry and solid over this stratum, it cannot be supposed that the bones have sunk through it to their present level; their position also excludes such a supposition, each bone lying horizontally, and the stratum also being horizontal. If the bones had penetrated the ground when it was soft, it cannot be supposed that they would have arranged themselves in a horizontal stratum, irrespectively of the unevenness of the ground, and of the various depths, three and eleven feet, necessary to attain this horizontal range; it is therefore evident, that this part of the valley was level when these bones were deposited, and that they lay on the surface, and were subsequently covered with earth. As they have been covered without being displaced, and without the horizontal position of each bone or of the stratum being disturbed, the only admissible supposition is, that they have been covered by an inundation. They must previously have been long accumulating; for there has been no accumulation since that supposed event, which bears any comparison for quantity with those thus imbedded. The inference also seems warranted, that quadrupeds have never been equal, either in number or variety, since such an inundation, to what they were previously to it. The ground on the opposite side of the rivulet is higher, and presents a different class of phenomena. There the bones lie promiscuously, at unequal depths, without any stratification; we must, therefore, suppose that some other agent than an inundation has contributed to this state of things. These bones are represented as in a state of "entire preservation;" a circumstance ascribed in part by the narrator to the salt with which the earth at Big-bone Lick is strongly impregnated. He adds a more remarkable fact, when he informs us that the process of petrification has commenced among them, and that many of them are completely petrified.

Some further interesting particulars respecting similar remains will be found in the following description of them by Mr. Atwater, as occurring in the state of Ohio. "I am credibly informed, that in digging a well at Cincinnati, in this state, an arrow-head was found more than ninety feet below the surface. At Pickaway plains, while several persons were digging a well several years since, a human skeleton was found seventeen feet six inches below the surface. This skeleton was seen by several persons, and among others, by Dr. Daniel Turney, an eminent surgeon; they all concurred in the belief, that it belonged to a human being. Pickaway plains are, or rather were, a large prairie, before the land was improved by its present inhabitants. This tract is alluvial to a great

depth; greater, probably, than the earth has ever been perforated, certainly than it has been here by the hand of man. The surface of the plain is at least one hundred feet above the highest freshet of the Scioto River, near which it lies. On the surface is a black vegetable mould, from three, to six, and nine feet in depth; then we find pebbles, and shells imbedded among them: the pebbles are evidently rounded and smoothed by attrition in water, exactly such as we now see at the bottom of rivers, ponds, and lakes. I have examined the spot where the skeleton was found, and am persuaded that it was not deposited there by the hand of man, for there are no marks of any grave, or of any of the works of man, but the earth and pebbles appear to lie in the very position in which they were deposited by the water. On the north side of a small stream, called Hargus creek, which at this place empties itself into the Scioto, in digging through a hill composed of such pebbles as I have described in Pickaway plains, at least nine feet below the surface, several human skeletons were discovered, perfect in every limb. These skeletons were promiscuously scattered about, and parts of skeletons were sometimes found at different depths below the surface. This hill is at least fifty feet above the highest freshets in the Scioto, and is a very ancient alluvion, where every stratum of sand, clay, and pebbles, has been deposited by the waters of some stream. Other skulls have been taken out of the same hill, by persons who in order to make a road through it, were engaged in taking it away. These bones are very similar to those found in our mounds, and probably belonged to the same race of men; a people short and thick, not exceeding generally five feet in height, and very possibly they were not more than four feet six inches. The skeletons, when first exposed to the atmosphere, are quite perfect, but afterwards moulder and fall into pieces. Whether they were overwhelmed by the deluge of Noah, or by some other, I know not; but one thing appears certain, namely,—that water has deposited them here, together with the hill in which, for so many ages, they have reposed. Indeed, this whole country appears to have been once, and for a considerable period, covered with water, which has made it one vast cemetery of the beings of former ages." Fragments of antique pottery, and even entire pots of coarse earthenware, have been found likewise in the excavations of the Illinois salt-works, at the depth of eighty feet and more from the surface. One of these was ascertained to hold from eight to ten gallons, and some were alleged to be of much greater capacity. This fossil pottery is stated not to differ ma-

terially from that which frequently occurs in the mounds supposed to have been formed by the aboriginal Indians.

The most extraordinary of the North American fossils in point of bulk, and we may add the most interesting to science, are the remains of the mastodon, an enormous creature of an extinct race, bearing a close affinity to the elephant, and long considered to be identical with it, but now allotted to a distinct genus, under the name of *Mastodon*. Of the discovery of these remains we would gladly give a detailed account if our limits would allow; but we must content ourselves with referring our readers to Godman's *Natural History*, vol. ii. where much information on the subject is collected. The size of the living animal may be conjectured when it is stated, that the head, at the posterior part, is 32 inches across, the lower jaw 2 feet 10 inches long, and the tusks 10 feet 7 inches long, and 7 3-4 inches in diameter at the base. The first vertebra, the atlas, is 11 inches broad, and 18 inches from tip to tip of the transverse processes. The scapula, or blade-bone, is 37 inches long, the shoulder-bone 2 feet 10 inches by 3 feet 2 1-2 inches at the largest part, and the fore-arm (ulna) 2 feet 5 1-2 inches in length by 3 feet 8 inches where largest. The pelvis is five feet 10 inches across; the thigh-bone 3 feet 7 inches in length, with a diameter of 8 inches in the middle; and the leg (tibia) 2 feet, with a diameter of 8 inches at the upper part. We have given an engraving of the skeleton in the nearly perfect condition to which it has at length been brought by the industry and labour of American naturalists, and may add the following not unnatural expression of feeling on beholding it:—"The emotions experienced when, for the first time, we behold the giant relics of this great animal, are those of unmingled awe. We can not avoid reflecting on the time when this huge frame was clothed with its peculiar integuments, and moved by appropriate muscles; when the mighty heart dashed forth its torrents of blood through vessels of enormous caliber, and the mastodon strode along in supreme dominion over every other tenant of the wilderness. However we examine what is left to us, we cannot help feeling that this animal must have been endowed with a strength exceeding that of other quadrupeds, as much as it exceeded them in size; and, looking at its ponderous jaws, armed with teeth peculiarly formed for the most effectual crushing of the firmest substances, we are assured that its life could only be supported by the destruction of vast quantities of food. Enormous as were these creatures during life, and endowed with

faculties proportioned to the bulk of their frames the whole race has been extinct for ages. No tradition nor human record of their existence has been saved, and but for the accidental preservation of a comparatively few bones, we should never have dreamed that a creature of such vast size and strength once existed,—nor could we have believed that such a race had been extinguished for ever. Such, however, is the fact—ages after ages have rolled away—empires and nations have arisen, flourished, and sunk into irretrievable oblivion, while the bones of the mastodon, which perished long before the periods of their origin, have been discovered scarcely changed in colour, and exhibiting all the marks of perfection and durability. That a race of animals so large, and consisting of so many species, should become entirely and universally extinct, is a circumstance of high interest; for it is not with the mastodon as with the elephant, which still continues to be a living genus, although many of its species have become extinct: the entire race of the mastodon has been utterly destroyed, leaving nothing but the 'mighty wreck' of their skeletons, to testify that they once were among the living occupants of this land."

We cannot quit this subject without adverting to a striking instance of the facility with which the marvellous may be converted into the miraculous. In reference to one of the mastodon skeletons discovered in the United States, we have the following passage in Cuvier, *Oss. Foss.* vol. ii. ed. 1. "But what renders this discovery unique among others, is that in the midst of the bones was found a half triturated mass of small branches, of gramina, and of leaves, among which it was believed that a species of reed still common in Virginia could be recognised, and that the whole seemed to be enveloped in a sort of sac, which was considered as the stomach of the animal; so that there was no doubt but that these were the very substances upon which the animal had fed." This information, it seems, was communicated to Mons. Cuvier by Dr. Barton in a letter, in which he says most truly, "*If the facts are as I state them*, you will not hesitate to consider the discovery one of the most interesting that has been made for a long time. I may add," he continues with great naivete, "that such a discovery *was hardly to be expected by the most sanguine or enthusiastic zoologist*." Truly we think not; and quite as little was it to be expected that men of science should be so bereft of common sense as to credit such an alleged discovery without a rigorous investigation. Not an approach to satisfactory evidence of such a

miracle exists. The reader may consult Godman's *American Natural History*, vol. ii. p. 240.

We ought not to omit a reference to some fragments of the skull of a fossil ox, which were thrown out at an eruption caused by an earthquake, at New Madrid, on the Mississippi, in 1812. It is stated that none of the oxen now in North America have crania "in the slightest degree" resembling this specimen. There has also been found upon the shores of Long Island a fossil skull of the genus *trichecus*, or walrus. It is agatized, and in fine preservation.* It is stated by Dr. Harman,† that in North America, there have been found fossil remains of eleven species of animals, which no longer exist in a living state, in that or in any other country.

With respect to the question whether the whole of these remains occur exclusively in alluvial formations, or whether some of them are not imbedded in deposits strictly diluvial, some difficulty seems to us to exist. That in part they are alluvial, admits of no doubt; and if it is to be set down as a criterion that human bones and works of art occur in none but alluvial deposits, then, of course, the inquiry is at an end. We cannot help asking, however, how, upon this supposition, the stratum of bones laid horizontally under an uneven surface at Big-bone Lick is to be accounted for; or the promiscuous deposit of bones in the higher ground. We feel a similar difficulty respecting the plains in Ohio, where human bones have been found, in some cases fifty, and in some at least an hundred feet "above the highest freshet" of the river in their neighbourhood. We can do no more, however, than suggest our doubts, and commend the inquiry to those who may be able to pursue it to a conclusive issue. Should there appear reason to think that these remains are in any case found in diluvial deposits, it will open a new and interesting field of observation. We subjoin some remarks of Mr. Schoolcraft, as a specimen of the method in which the strictly alluvial character of these deposits is maintained. "One striking fact, which appears to have escaped general observation, is, that at some former period, there has been an obstruction in the channel of the Mississippi at or near Grand Tower, producing a stagnation of the current at an elevation of about 130 feet above the present ordinary water mark. This appears evident from the general elevation and direction of the hills, which, for several hundred miles above, are separated by a val-

ley from twenty to twenty-five miles wide, which now deeply embosoms the current of the Mississippi. Wherever these hills disclose rocky and precipitous fronts, a series of distinctly marked antique water-lines is to be observed. These water-lines preserve a parallelism which is very remarkable, and as we should expect to find, constantly present their greatest depression towards the sources of the river. At Grand Tower they are elevated about 130 feet above the summer level, at which elevation we observe petrifications of madrepores and various other fossil organic remains which belong to this peculiar era. Here the rocks of dark-coloured limestone, which pervade the country to so great an extent, project towards each other as if they had once united; but by some convulsion of nature, or what is still more probable, by the continued action of the water upon a secondary rock, the Mississippi has effected a passage through this barrier, thus producing an exhaustion of the stagnant waters from the level prairie lands above. The whole Missouri shore, from the vicinity of Grand Tower extending upwards, is sufficiently elevated to have served, at a former period, as the western shore of an expanse of waters standing upon the present surface of the state of Illinois. This hypothesis derives additional weight from an attentive consideration of the mineral character of the alluvial deposits forming the surface of the prairies, in which we often observe fine, hard, and compacted layers of earth, similar to those which are found at the bottom of mill-ponds, where the water has been long stagnant."

Before closing our notices of fossils, we must briefly advert to those which have been found in the caverns, with which the limestone districts of the United States abound, in a manner analogous to those of Europe. In too many instances caverns have been penetrated, and their contents disturbed, without any accurate observation or report: Professor Eaton, however, writes on the subject as follows: "The new cavern in Root's Nose, on the Erie Canal, I carefully investigated, aided by three accurate assistants. This is 400 feet in extent. I caused two important caverns to be minutely examined in the Helderberg by three good assistants, of whom Mr. Finch, the geologist, was one. In addition to these, I have caused the important points suggested by Buckland to be searched out in several of the Kentucky and Illinois caverns. Nothing resembling the bones so abundant in European caverns has hitherto been discovered. Who-

* Godman, vol. iii.

† *Fauna Americana*.

‡ We have quoted accurately; but this statement appears to us,

if correct, irreconcilable with Mr. Schoolcraft's theory. Watermarks produced by the course of a stream, would present their greatest elevation towards its source.

ever will take the trouble to make personal inquiry, or to look over the journals of the last half century, will learn that all the bones disinterred in this country which may be called antediluvian, belong to the pachydermata, or thick skin order. I can not learn that a fragment of hyæna bone has ever been found in this hemisphere. I have taken measures to secure every important discovery made by the workmen on the canal for the last four years; I distributed 1000 copies of a pamphlet giving plain instructions for making collections, along the canal line, while the labour of excavating 360 miles was going on; but not a fragment of a dry-land animal was discovered. I may add, that we found stalagmites in all the caverns, as described by Buckland; and on shelves, and in other situations protected from the touch, and in almost every part of the new cavern in Root's Nose, we found a deposit resembling what I have elsewhere denominated ultimate diluvion." From these facts he derives the conclusion, not perhaps improbable, yet open to correction by future researches, that antediluvial animals were few on the North American continent, and that they consisted chiefly of large species of pachydermata.

We may now find a proper place for adverting to another topic. The geological aspect of the United States has, in many instances, been apparently modified by the comparatively recent operation of natural causes; such as the fall of a portion of a mountain, an impetuous torrent of water, or the draining of a lake. These are scenes which strongly tempt the spectator to suspect, and almost to be confident, that such events have occurred within a thousand, or perhaps within a few hundred years, and have given origin to valleys, and cliffs, and strata, and river courses, which now mingle in entire harmony with the general landscape. The want of written records among the native tribes precludes the possibility of discovering any other memorials of these catastrophes than such as are impressed on the face of nature; but while the idea is encouraged by the immense force of the causes which are here in operation, and the vastness of the scope which is open to their action, it is converted almost into certainty by occurrences of a similar kind which have taken place within the period of accurate observation and record. We may mention one in illustration of the manner in which local deposits of gravel may have been formed, and at a height considerably exceeding that of the water which produced them. The severity of the winter of 1821-2 having formed the ice of the Hudson of unusual thickness, it broke up suddenly, and moved down, not with great velocity, but with

a degree of force which seemed to threaten even the shores of solid rock. Pressing against a little rock promontory across which a canal is cut, cakes of ice shot over, and soon filled the canal. Other cakes pressing against the bottom of these, lifted them up to a considerable height above the water. At length an enormous ice cake appeared, bearing on its back a great quantity of gravel, and began to press against the heaps of ice already formed, which bore much gravel also. Innumerable other cakes from behind, urged on by the unconquerable waters of the Hudson, soon forced the largest cake across the canal, and up the eastern bank, so that its eastern edge extended thirty-four feet higher than the surface of the water, carrying up hundreds of smaller cakes to the same height. "This mountain of ice," says Professor Eaton, "having taken its stand here, is now melting away, and leaving on the bank the gravel which it transported from the northern counties. I do not record this," he adds, "as an uncommon occurrence; but since it seems to be a rule among geologists to trace the derivation of alluvial deposits to localities more elevated than those where they are found, it may be well to remind them of contingencies of the above nature."

The following brief account relates to the cutting of deep channels by mountain torrents, and the formation and impulse of boulders. Deerfield river, in the greater part of its course, is a mountain torrent, very rapid and powerful, and has worn itself a passage often 400 feet deep, the banks being almost perpendicular. The ice freezes three or four feet thick, and when a sudden rain melts the snows on its banks, the stream rises rapidly, and lifts up and urges forward with tumultuous fury this immense body of ice. As the banks among the mountains are steep and rocky, they prevent the accumulation of water and ice from spreading to the right or left, and thus an immense force is exerted upon obstacles in the bed of the stream, which, in winter floods, is filled with huge masses of ice to the very bottom. In the west part of Shelburne this river descends a cataract thirty or forty feet high. The rock in the bottom of the river is an aggregate of quartz and mica, with hornblende intermixed, and below the falls it is unstratified, almost without seams, and very hard. Here we might expect the force of the torrent would be very powerful; and accordingly are found masses of this rock, from one to ten feet in diameter, raised from their bed and removed down the stream, some only a few rods, but some one or two miles. Some very large blocks are seen just beginning to be raised from their bed. "Previously to viewing this spot," says

Mr. Hitchcock, "I had no just ideas of the enormous force exerted by a mountain torrent."

The most interesting account of this kind, however, is that given by the Rev. S. E. Dwight, of his visit to a lake which had burst its banks through an indiscreet attempt to draw off part of its waters to a needy mill. By virtue of the sandy nature of its margin, the whole contents of the basin were set at liberty, and made, of course, in their progress, a frightful desolation. "I was most agreeably surprised," says our traveller, "as I descended the hills which overlook the valley of the river, to find the ravages made by the flood so distinctly visible, after the lapse of thirteen years. Our first view of the desolation presented a gully, or excavation in the earth, extending up and down the river as far as its course was visible, and varying in breadth from twenty to forty rods, and in depth from twenty to forty feet. This immense channel, except what had been previously worn away by the gradual attrition of the streamlet, had all been hollowed out at once by the violence of the torrent. Its sides were precipices of earth or sand, every where indicating the avulsion of the mass which had been adjacent, and exhibiting, in frequent succession, large rocks laid bare and often jutting out into the gully, and near the top the uncovered roots of trees, which, having been partially undermined by the water, still nodded over the precipice. The bottom of this channel, as far as we could see, was covered with larger and smaller rocks and stones, and in some places with extensive deposits of sand. The sight of this vast excavation only heightened our conceptions of the effects of the flood."

We know not where, better than in connexion with these facts, to introduce one still more remarkable, if not altogether inexplicable. There have been found, it appears beyond all question, in naked limestone of the elder secondary formation, close on the western margin of the Mississippi at St. Louis, the prints of human feet. The prints are those of a man standing erect, with his heels drawn in, and his toes turned outward, which is the most natural position. They are not the impressions of feet accustomed to a close shoe, the toes being very much spread, and the foot flattened in the manner that happens to those who have been habituated to go a great length of time without shoes. The prints are strikingly natural, exhibiting every muscular impression and swell of the heel and toes, with great precision and faithfulness to nature. The length of each foot, as indicated by the prints, is ten inches and a half, and the

width across the spread of the toes, four inches, which diminishes to two inches and a half at the swell of the heels, indicating, as it is thought, a stature of the common size. Every appearance seems to warrant the conclusion that these impressions were made at a time when the rock was soft enough to receive them by pressure, and that the marks of feet are natural and genuine. "Such was the opinion of Governor Cass and myself," says Mr. Schoolcraft, "formed on the spot, and there is nothing that I have subsequently seen to alter this view; on the contrary, there are some corroborating facts calculated to strengthen and confirm it." At Herculaneum, in the same neighbourhood, similar marks have been found, as well as on some of the spurs of the Cumberland mountains, always in similar limestone. In the latter case it is stated that the impressions are elongated, as of persons slipping in ascending a slimy steep. Opinions are much divided as to the origin and import of these impressions.* Should similar observations multiply, important inferences may perhaps be drawn from them; at present it seems impossible to speak respecting them decisively or satisfactorily. They may perhaps be connected with the tracks of animals which have been noticed in Scotland.†

The following extraordinary facts, respecting what may be termed living fossils, appear to be well authenticated. During the construction of the Erie canal, while the workmen were cutting through a ridge of gravel, they found several hundred of live molluscous animals. They were chiefly of the *Mya cariosa* and *Mya purpurea*. "I have before me," says Professor Eaton, "several of the shells from which the workmen took the animals, fried and ate them. I have received satisfactory assurances that the animals were taken alive from the depth of forty-two feet." In addition to this discovery in diluvial deposits, mention is made of a similar one in a much older formation. In laying the foundation of a house at Whitesborough, the workmen had occasion to split a large stone from the millstone grit. "It was perfectly close-grained and compact. On opening it they discovered a black, or dark brown spherical mass, about three inches in diameter, in a cavity which it filled. On examining it particularly, they found it to be a toad, much larger than the common species, and of a darker colour. It was perfectly torpid. It was laid upon a stone, and soon began to give signs of life. In a few hours it would hop moderately, on being disturbed. They saw it in the yard, moving about slowly for several days; but it

* Silliman's Journal, vol. v. p. 223.

† See Dr. Brewster's Journal, April, 1828.

was not watched by them any longer, and no one observed its farther movements. They laid one half of the stone in the wall, so that the cavity may still be seen. "The millstone grit," says Professor Eaton, who gives this account, "in which this toad was found, is the oldest of the secondary rocks. It must have been formed many centuries before the deluge. Was this toad more than 4000 years old? or was it from an egg introduced, through a minute and undiscovered cleavage, into this cavity or geode, made precisely to fit the size and form of a toad? I was particular in my inquiry, and learned that the whole stone was perfectly compact, without any open cleavage which would admit an egg. Besides, it is well known that the millstone grit is neither porous nor geodiferous. If this rock stratum was deposited upon the toad, it must have been in aqueous, not in igneous solution, and the toad must have been full grown at the time. Toads are often found in compact, hard, gravelly diluvial deposits, in situations which demonstrate that they must have lived from the time of the deluge. I think I am warranted in saying this without citing authorities, as it is a common occurrence. Then why may they not have lived a few centuries longer, if we admit them a life of at least 3000 years?"

In the present unsettled state of geological investigation with regard to the United States, every observer of the phenomena which marked the physical formation of the country, deserves to be listened to with more or less regard. It is to be regretted that more confidence can not be placed in the accuracy of the speculations which Professor Eaton has with such boldness ventured to publish; and it would have been well had the English editor availed himself of the researches of Mr. Hayden, whose Geological Essay contains a large amount of facts on some of the most important phenomena to be found in various parts of America.* In his Lectures on Geology, delivered in the New York Athenæum, Dr. Van Rensselaer gives us the following list of fossils found in the United States :

Megatherium	Balena
Megalonyx	Manatus
Mastodon	
Elephas	Ichthyosaurus
Bos	Plesiosaurus
Cervus	Saurocephalus

Testudo	Venericardia
Squalus	Cucullæa
Raia	Anomia
Acipenser, and many	Nerita
undetermined genera	Pectunculus
and species.†	Trigonia
Medusa	Mytillus
Cancer	Amphidesma
Trilobite	Corbula
Asteria	Panopœa
Echinus	Crassatella
Caryophyllia	Isocardia
Pentremite	Calyptraea
Encrinite	Lucina
	Astarte
	Fusus
Ammonite	Fulgur
Nautilite	Dispotœa
Belemnite	Pecten
Orthoceratite	Helix
Natica	Plicatula
Oliva	Serpula
Cardita	Cellapora
Bilobite	Millepora
Terebratulite	Alveolite
Arca	Favosite
Mactra	Tubipora
Donax	Turbinolia
Ostrea	Astrea
Gryphea	Madrepora
Perna	Oculina
Patella	Corallium
Conus	Pennatula
Conularia	Sertularia
Terebellum	Alcyonite
Murex	Orbulite
Strombus	Bacculite
Turbo	Fasciolite
Planorbis	Dentalium
Turritella	Ammonite
Serpula	Nummulite
Balanus	Spirula
Glycemeris	
Cytherea	Felices
Productus	Palma
Pentamerus	Quercus
Venus	Juglans nigra
Cardium	Fagus.
Cardita	

* See Geological Essays, 8vo. Baltimore, 1820.

† In a paper recently read before the Lyceum of Natural History, Dr. Dekay has attempted to show that nearly all the fossil fish from the great depository at Westfield, (Mass.) and which have

been referred to the genus *Paleothrissum* of Blainville, are not generically distinct from the *Esox Osseus*, or bony scaled pike of the Mississippi

The following fossils have been enumerated by Dr. Bigsby, in his geological papers on the country around Lakes Huron and Erie.

Trilobite	and Flustra, in great
Ammonite	abundance. Nine
Orthoceratite	new varieties of
Conularia	Madrepores
Terebratulæ	Lingula
Productæ	Calyptrea?
Encrinis	Cerithium
Caryophyllia	Unio
Turbinolia	Mytilus
Astrea	Gryphea
Cellular and chain Mad-	Arca
repores, Strues, and	Lilly and Pear Encri-
Ramosa, Retepores	nite.

CHAPTER II.

MINERALOGY.

From the Geology of the United States, we now turn to their Mineralogy, which is equally ample and extraordinary. We may first give a general view of the mineral contents of the several classes of strata.

A great variety of mineral substances are found in the primitive formation, such as garnets in the granite and mica slate, from the size of a pin's head to that of the head of a child, staurolite, andalusite, epidote in vast variety and abundance, tremolite, all the varieties of magnesian rocks, emerald touching graphic granite, and disseminated in the granite of a large extent of country, adularia, tourmaline, hornblende, sulphate of barytes, arragonites, &c. From the number already found in proportion to the little research that has yet been employed, there is every reason to suppose, that in so great an extent of crystalline formation, almost every mineral discovered in similar situations on the ancient continent will be found on the new. Metallic substances in the primitive are generally extensive, like the formation itself. Iron pyrites runs through vast fields, principally of gneiss and mica slate; magnetic iron ore, in powerful beds, from ten to twelve feet thick, generally in a hornblende rock, occupies the highest elevation, as in the Highlands of New York, the Jerseys, the Yellow and Iron Mountains in the west of North Carolina; a black brown bed of hematitic iron ore occurs in Connecticut and New York states; crystals of octahedral iron ore (some of which have polarity)

are disseminated in granites, as at Brunswick, district of Maine, and in many varieties of the magnesian genus; black lead is met with in beds from six to twelve feet wide, traversing the states of New York, Jersey, Virginia, Carolina, &c.; native and gray copper ore, near Stanardsville, and Nicholson's Gap, Virginia, is disseminated in a hornblende and epidote rock, bordering on the transition; molybdena at Brunswick, (Maine,) Chester, (Pennsylvania,) Virginia, North Carolina, &c.; arsenical pyrites in large quantities in the district of Maine; red oxyd of zinc and magnetic iron ore in a powerful bed on the edge of the primitive, near Sparta, in New Jersey, having a large grained marble, with nigrin or silico-calcareous titanium imbedded in it on one side, and hornblende rock on the other. This bed contains likewise large quantities of blende. Detached pieces of gold, of which we shall presently speak more particularly, have been found in the beds of some small streams in North Carolina, and other places. Manganese has been found in New York, North Carolina, &c. Near the confines of the old red sandstone and primitive formation, a white ore of cobalt has been wrought above Middletown, on the Connecticut river, and found also, as it is said, near Morristown, in New Jersey. The general nature of metallic repositories in this formation appears to be in beds, disseminated, or lying in masses; when in beds (as the magnetic iron ore and black lead) or disseminated (as the iron pyrites, octahedral iron ore, molybdena, &c.) they occur at intervals through the whole range of the formation. Veins to any great extent have not yet been discovered in this formation.

Beds of coalblende, or anthracite, accompanied by alum slate and black chalk, have been discovered in the transition strata, on Rhode Island, the Lehigh and Susquehannah rivers, and a large body of alum slate in Virginia; many powerful veins of the sulphate of barytes cross it in different places; granular, as that near Fincastle, or slaty, as that in Buncomb county, North Carolina. Iron and lead have as yet been the principal metals found in this formation; the lead in the form of galena, in clusters, or what the Germans call Stockwerk, as at the lead mines on New River, Wyeth county, Virginia; the iron disseminated in pyrites, hematitic and magnetic iron, or in beds; and considerable quantities of the sparry iron ore in beds, and disseminated in the limestone. Prehnite and Zeolite are found in the trap of the old red sandstone formation; and considerable deposits of magnetic iron ore at Grub's mines are enveloped, and have their circular layers intersected, by greenstone trap, on a ridge of which

this extensive cluster of iron ore seems to be placed. Gray copper ore has been found in the red sandstone formation, near Hartford and Washington, in Connecticut; there are likewise mines in New Jersey, where copper pyrites and native copper have been found. The metallic veins at Perkiomen creek, containing copper, pyrites, blende, and galena, are in the same formation, running nearly north and south across the east and west direction of the red sandstone, and a small bed, from a half to three inches thick, of brown or red copper ore is interspersed, and follows the circular form of the iron beds at Grub's mines.

In the secondary and tertiary formations eastward of the Apalachian mountains, considerable deposits of bog iron ore occupy the lower situations, and many of the more elevated and dividing ridges between the rivers are crowned with a sandstone and puddingstone, the cement of which is bog iron ore. Large quantities of ochre, from bright yellow to dark brown, are found in this formation, in flat horizontal beds, alternating with other earths in some places, in others in kidney-form masses, from the size of an egg to that of a man's head; in form resembling much the flint found frequently in chalk formations.

In the ordinary mineral productions, such as sand of all qualities, brick-earth, stone adapted for buildings of all descriptions, as well as for any kind of workmanship, the resources of the United States are inexhaustible. The same may likewise be said of many minerals of less universal occurrence, of which it may be expected that we should speak somewhat more particularly. To speak first of the precious metals. Gold is found in considerable quantities in North and South Carolina, on the eastern side of the Apalachian Mountains. One mass is stated to have weighed 28lbs. The value of the gold received at the mint of the United States up to 1820, was 44,000 dollars, or about 11,000*l.* sterling. It is remarkable that the gold of this region is found not only in alluvium, as in South America, but in its matrix, though the opinions of the scientific men who have written upon it are so various, as to render it difficult to say what the matrix is. By Professor Olmstead it is referred to clay slate (argillite;) by Mr. Rothe to granite, and beds of greenstone occurring in granite; and by Professor Eaton to talcose slate, a kind of rock, in which he states that a small portion of gold has been found in Maryland.* Its occurrence in the alluvium is thus explained, with

great probability, by Professor Mitchell:—"It formerly existed in the rocks of the region in which it is found, whether in veins of quartz exclusively, or also disseminated through the rock, is in a degree uncertain; but I am inclined to think, disseminated also. As the rocks have undergone decomposition, it has fallen out, and now lies mingled in the soil, near the same spot, and bearing the same proportion to the earthy matter as when enclosed in its original stony matrix. In a few cases only, where it happened to occupy the side of a steep declivity, it has been carried down during the violent rains into the adjacent low grounds, and the beds of the neighbouring streams." He gives also the following general result of his inquiries:—"The gold of North Carolina is found,—1. In veins of quartz traversing the ancient primitive rocks, in very small quantity. 2. In veins of quartz traversing more recent primitive rock, in considerable quantity. 3. In veins of quartz traversing transition rocks, and also disseminated, in considerable quantity. 4. In soil produced by the decomposition of these three kinds of rock. 5. In the sand of a stream running over old red sandstone, in very minute quantity.

Silver and its ores are not of frequent or extensive occurrence. Dr. Dana states the curious fact that, near Portsmouth, New Hampshire, a mass, three or four inches in diameter, was found on the top of a wall, composed principally of native silver in filaments: the surrounding hills are chiefly greenstone. Mercury, which has been found native in Kentucky, occurs more plentifully as a sulphuret, (Bituminous Cinnabar, *Cleaveland*), in Ohio and the Michigan territory, more particularly on the shores of lakes Michigan, Huron, St. Clair, Detroit River, and Lake Erie to the mouth of Vermilion River. It occurs in the soil in the form of a black and red sand, but is usually more abundant in banks of fine ferruginous clay. Near the mouth of Vermilion River, it is in the form of a very fine red powder, or in grains and small masses, disseminated in clay. It yields by distillation about 60 per cent. of mercury.

Copper, in various forms, occurs in the United States, but the ores do not appear to be brought into use. This metal is not found so abundantly on the shores of Lake Superior as it was anticipated it would be; but many specimens of copper ore have been found at different points in the Mississippi valley. Specimens of pure and malleable copper have been obtained: one of which, said to have been found in Illinois, thirty miles east of St. Louis, weighed three pounds. In the United States ores of iron are abundant. Those hitherto worked are chiefly the

* Silliman's Journal, vol. vii.

magnetic oxide, brown hematite, and the argillaceous oxide, particularly bog ore. The more important ores are the following, viz. in New Hampshire, the magnetic oxide; in Vermont, brown hematite, and bog ore; in Massachusetts, bog ore; in Rhode Island, brown hematite; in Connecticut, brown hematite, and bog ore; in New York, the magnetic, specular, and argillaceous oxides; in New Jersey, the magnetic and argillaceous oxides; in Pennsylvania and the states south and west, the magnetic oxide, brown hematite, and the argillaceous oxide. To these may now be added the carbonate of iron, which has recently been successfully smelted, and which produces iron having the carbonaceous impregnation of steel, whence it has been called steel ore. In New York, New Jersey, and Pennsylvania, the ore is found in an abundance, and of a quality not exceeded in Sweden. The Connecticut and Virginia iron is highly esteemed. More than 600 furnaces, forges, and bloomeries, now exist in the United States; at which it is estimated that about 30,000 tons of bar iron, and about 60,000 tons of cast iron, are annually made. In 1819, 20,000 tons of iron, in bars and bolts, were imported into the United States. In Ohio, are furnaces or forges, or both, in nine or ten counties. The ore sometimes occurs in nodules in clay, and sometimes it is a very ferruginous sandstone, occurring in beds.

The ores of lead are extensively found in the territories of the republic; and in Ohio, it is stated to have been met with native, forming slips, or slender prismatic masses, in crystallized galena. This mineral is found in various places, from the Arkansas River to the northwest territory, the precise line of the Ozark and Shawnee mountains, a tract which seems to constitute one of the most important and extensive deposits of lead hitherto known. On the Arkansas, the ore is smelted by the Osage Indians for bullets. To the northward, some valuable mines at Prairie du Chien are imperfectly worked by the proprietors of the soil. But the most important mines are those in Cape Girardeau district, commonly known as the lead mines of Missouri. The mining district is situated between two prominent ridges of sandstone, which bound the valley of Grand River, or the basin of Potosi. These ridges diverge in their course northward, and are intercepted by the Merameg, which receives the waters of Grand River, and forms a boundary to the mining district in that direction. The area, thus isolated by prominent topographical boundaries, forms the metalliferous district, where mining operations were first commenced by the French about a century since, and have been continued, with more or less activity, to the present period. The consoli-

dated portions of this area consist of two distinct deposits of limestone, a formation of sandstone, and another of red marl, the latter of which has, thus far, yielded the greatest quantities of lead ore. This metalliferous marl fills large veins and fissures in the inferior stratum of limestone, and there is reason to conclude that it is found, in some cases, in the position of subordinate beds. The galena and spars found in this marl are never abraded, but present all their crystalline characters unimpaired by the action of any accidental forces. The superior limestone is compact, shelly, and blackish, and seems to be above the metalliferous marl. Over the whole, and forming the surface of the country, is a heavy deposit of diluvial materials, pebbles of various formations, ferruginous loam, fragments of quartz, &c. This is the repository of those comparatively limited beds of abraded galena which are denominated gravel ore, and which has all the marks of diluvial action. Mixed with the more finely comminuted portions of rock, are found fragments of quartz, and lumps of lead ore, together with rounded masses of pre-existing strata representing the two great classes of formations, which most geologists have felt a necessity for recognising under the names of primitive and secondary. Most of these masses are small, not exceeding a few ounces in weight, and few are found to exceed the size of a cannon shot. Some writers have been disposed to ascribe the ore found so abundantly, and so contrary to all analogy hitherto observed, in the veins of red marl or clay in the galeniferous limestone, to diluvial action likewise; but Mr. Schoolcraft positively assures us that there are none of those marks of abrasion which such a theory would require. The galena raised from the marl, he tells us, is as free from any marks of diluvial action, as if it had been fresh blasted from the most solid parts of the limestone. That the red marl never has been so disturbed, appears also from the large vein-like beds of sulphate of barytes which traverse it. To assert that these very white, highly crystalline bodies of spar, often enveloping cubical masses of galena, and large beds of galena with the cubical pyrites and octahedral and crested iron ores of the basin of Potosi, could have been removed by any known forces amid the earthy mass in which they are found, without effecting a visible obliteration of their angles, would certainly be not very reasonable. The same series of formations extends in a particular direction, not only from the Merameg to the St. Francis, throughout the broadest part of the valley of Grand River, but even beyond it, to the southern limits of the state of Missouri, to the upper tributaries of White River

and to the Strawberry branch of Black River. Towards the north also, this metalliferous red clay and its accompanying strata have been traced; whether uninterrupted or not, they certainly reappear, with some differences, on the Upper Mississippi, at the mines of Peosta and Dubuque. In the Shawnee mountains, in the southern part of the state of Illinois, mining was formerly attempted, but it is now abandoned. Tin has not been found in the United States. And although the ores of zinc, antimony, and many other metals, occur in various localities, they do not possess sufficient importance to require further notice here.

Coal is known to exist in the United States in great quantity, and has been sought after to a considerable extent, although the abundance of wood has hitherto impeded the working of the mines to their full capability. The kinds of coal found in this extensive territory are very various, and the localities in which they are met with are of corresponding diversity. They are classed by Professor Eaton under the following heads:—First, The genuine anthracite, or glance coal, found in the transition argillite, as at Worcester, (Massachusetts,) Newport, (Rhode Island;) also in small quantities in the north and south range of argillite along the bed and banks of the river Hudson. Second, Coal destitute of bitumen, usually called anthracite, but differing greatly in its character from the anthracite found in argillite. It may be called anasphaltic coal. This is embraced in a slate rock, being the lowest of the lower series of secondary rocks. This coal formation is equivalent to the great coal measures of Europe. There is always bitumen in a greater or less proportion, though the proportion is often exceedingly small.* The principal American localities of this coal hitherto discovered are in the state of Pennsylvania; as at Carbondale, Lehigh, Lackawaxen, Wilkesbarre, &c. Third, The proper bituminous coal, as at Tioga, Lycoming, &c. This coal is embraced in a slate rock, which is the lowest of the series of upper secondary rocks. The fourth formation is the lignate coal, which is found in a very extensive stratum in the state of New Jersey along the south shore of the bay of Amboy. The second species of coal is becoming of considerable importance in the United States, and rising into high estimation, as peculiarly adapted to various useful purposes. When once ignited, it burns with a strong and durable heat; and indeed much of the difficulty of

kindling it may be avoided by the addition of a certain quantity of charcoal, and by a strong current of air judiciously managed. As it is composed almost entirely of carbon, without bitumen, or even sulphur, except from the accidental presence of pyrites, it burns without caking, and is very useful in those operations where a durable and uniform degree of heat is required. Hence its use in smelting iron ore, and in the preparation of steel; in burning limestone; in salt-works, and other processes of evaporation; in distillation, preparing malt, &c. &c. But as it burns without flame, it cannot be employed in reverberatory furnaces; and, as it does not cake, it cannot be used by the smith for those purposes of the forge where a hollow fire is required. It has been common to consider this anasphaltic coal as a true anthracite, and the strata in which it is found as properly belonging to the transition class; but it would be difficult to admit this in conjunction with such a profusion of vegetable remains as occur in connexion with it. In visiting several of the mines of the Susquehanna, and Lackawanna, the naturalist is gratified by seeing the vast deposits of vegetable impressions and remains which accompany the coal, usually in the slate that forms the roof, and occasionally in that of the floor; they exist also, although in a smaller degree, in the sandstone, and sometimes, but much more rarely, even in the coal itself. There are instances where they fill the slate for a space of ten feet in thickness, and, making due allowance for the compression which they have undergone, the original deposits must have occupied a vastly greater thickness than their relics do now. The impressions are very perfect, indicating repose and calm at the time of their deposition, and excluding the possibility of transport from distant countries. There are many species of ferns, none of them, as it is said, modern, and most or all of them tropical; there are impressions, sometimes several feet long and broad, of the bark of gigantic vegetables, some botanists say they are palms; occasionally there are entire limbs, carbonized; frequently, broad leaves are found of six or seven inches or more in diameter; culmiferous plants are numerous, and so are the aquatic algæ, and rushes. The leaves of the plants are usually in full expansion, the most delicate parts of their structure being exactly preserved or copied; and according to Mr. Cist, flowers of a stellated form are occasionally found. Professor Hitchcock believed that he had found a flower with unfolded petals. If all these remains are found in transition rocks, it is certainly a new feature in geological science; if, on the contrary, according to Professor Eaton, the strata

* This is called in question by Dr. Silliman, who asserts that he has repeatedly distilled different varieties of this coal without obtaining any bitumen.

in which the anasphaltic coal lies are of the elder secondary, then this class of rocks must be of more extensive occurrence on the eastern side of the Appalachian Mountains than has been hitherto supposed.

We cannot withhold from our readers the following speculations of a scientific observer on the probable formation of these interesting beds:—"Is the anthracite coal," says Dr. Silliman, "of vegetable origin? Does the fibrous charcoal, frequently found between its layers, owe its origin to the vegetable skeleton? There seems no more reason to doubt the latter fact, than that the vegetable impressions found in and upon the coal and its rocks have the same origin. But did the mass of coal arise from vegetables? This has been admitted by many persons with respect to bituminous coal, but, I have heretofore been inclined to attribute anthracite coal to a direct mineral creation; the opinion of its vegetable origin appears however to me less improbable, since I have seen with my own eyes the incontrovertible and abundant proofs of vegetable life in these mines. We are obliged, from the facts here seen, to go a great extent in admitting vegetation in connexion with this coal. But if we seek to trace the entire masses to vegetable matter, how shall we admit the existence and accumulation of the enormous quantities that must have grown or been collected on the spot, to form such stupendous beds, ten, twenty, and thirty feet in thickness, and repeated, again and again, with all their attendant rocks and impressions? But, the plants, from ferns and liliputian vegetables to those of great size, did grow, and were deposited, in connexion with these coal strata, for there we find their unquestionable and exuberant remains; and they were produced again and again, for we find them in the different deposits, as the coal strata succeed each other at different depths. As the vegetables, whose organized forms or impressions we actually find, did exist in these places, could there, by any possibility, have been enough accumulated to form the coal beds? If it is difficult to answer in the affirmative, perhaps it is not quite certain that we must reply in the negative; at least it is not, I must confess, quite so certain as I once thought it to be.

"But, supposing the vegetable matter to have existed in sufficient quantity to have formed the coal; why, if so formed, is there in general no appearance of ligneous structure, of vegetable organization in the coal itself? On this point it may be suggested, that the vegetable matter may have been so decomposed, as to lose in a great degree its organization; it may have been suspended or deposited in water along with the same earthy matter which formed

the accompanying rocks, and particularly the coal slate, and this earthy matter may have been deposited along with and among the particles as well as the masses of coal, now in minute proportion, as we actually find it in burning even the purest anthracite, the form and structure of whose layers is delicately exhibited by the earthy skeleton, commonly called ashes, which remains: now the earthy matter may have prevailed to a greater degree, and then the coal is more impure, less combustible, and affords a more abundant residuum; again, the earthy matter may have prevailed still more, and then the deposit is a carbonaceous slate; and lastly, the carbon may have been supplanted by the earthy matter, and then seams of slate would be formed, as we actually find them in the coal beds. Without some such process, it seems difficult to account for the varying proportions of earth and carbon which we find blended in the anthracites; the extremes being the purest coal on the one hand, and slate on the other, and between these there appear to be innumerable mixtures or combinations of earth and coal in different proportions.

"Perhaps the reason why the vegetables found in the slate retain their organized form, is found in the fact, that the fine sedimentary earths, the silicious and argillaceous, of which the slate is composed, may have enveloped the plants too suddenly to permit them to undergo decomposition, and thus to exhibit an impalpable carbon; while their forms would, of course, be distinctly impressed upon the yielding plastic matter of the slate, rendered soft perhaps by diffusion in water. Pressure is also to be taken into account in reasoning upon the probable obliteration of the organic structure; this force would operate in proportion to the progress of the accumulation, whether of coal strata, or of those of superincumbent rock."*

The appearance of the Tioga, or bituminous coal, differs so little from the well known character of the best Liverpool or Newcastle coal, that it scarcely requires a description. Its colour is velvet black, with a slight resinous lustre, its structure is slaty or foliated, and its layers, as in the best English coal, divided into prismatic solids, with bases slightly rhomboidal; it is easily frangible and slightly soils the fingers. The specific gravity is 1,287. It burns with a bright flame and considerable smoke, with a slight bituminous smell, a sort of ebullition taking place, and, as the heat increases, an appearance of semifusion, leaving a slight residue or scoria.

* Silliman's Journal, vol. xviii.

In 100 parts of coal are, Carbon	66	7
Bitumen	30	43
Earth	3	50
	<hr/>	
	100	00

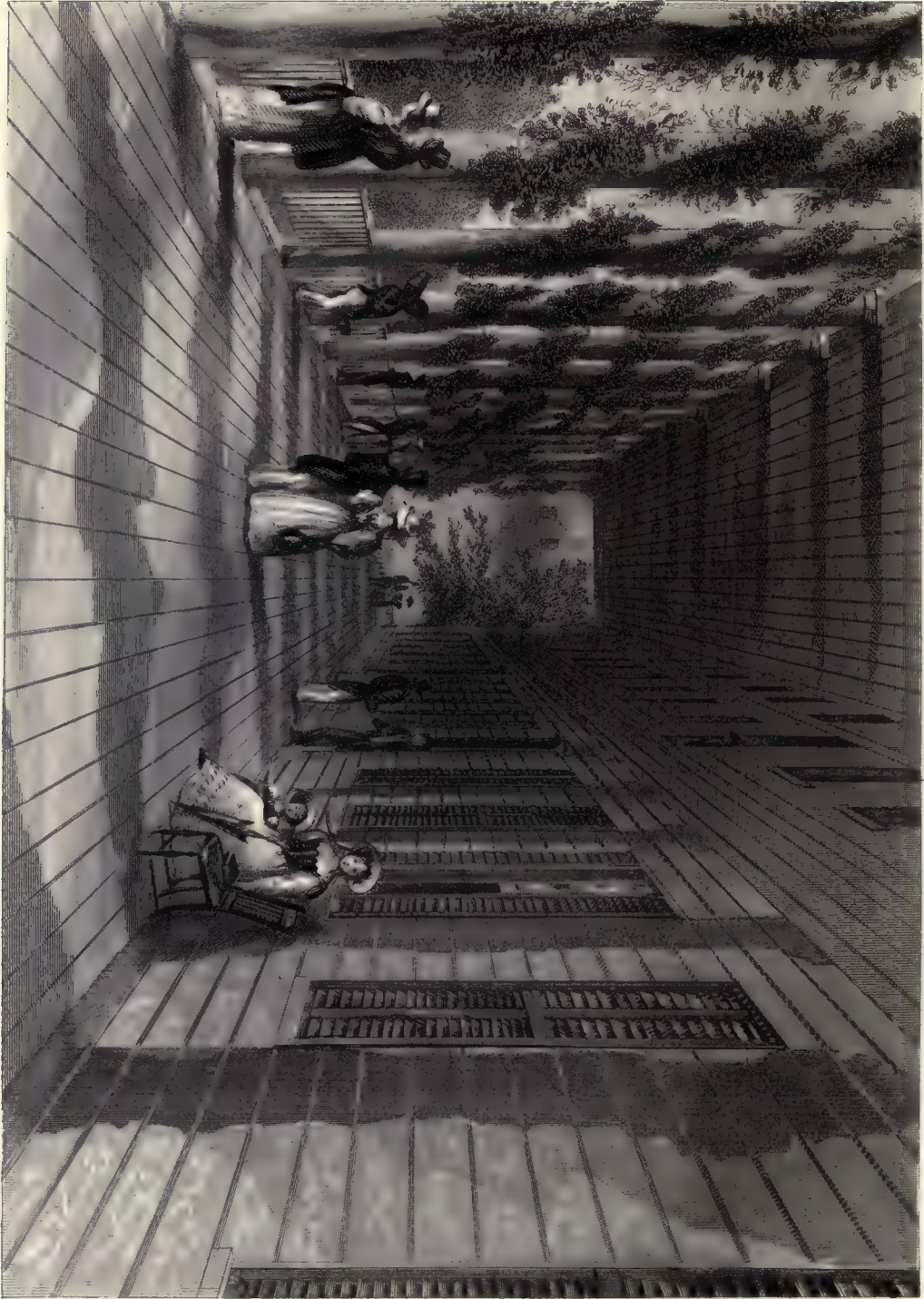
It thus appears that the Tioga coal is of an excellent quality, fully equal to the best Liverpool coal, and fit for all the purposes of manufactures, but requiring to be converted into coke before it can be made use of in the smelting of iron ore, or in many other processes in metallurgy and the arts. This should be always kept in view, and is the principal distinction between it and the anthracite or non-bituminous coal of Rhode Island and Pennsylvania. Each of them has its distinctive and valuable qualities. While the anthracites consist nearly of from ninety to ninety-seven per cent. of pure carbon, the Tioga coal contains only 66.7, the residue being chiefly bitumen, a substance which renders it extremely valuable in domestic use, and in the reverberatory furnaces, but inapplicable to many other purposes which the experienced artist can easily comprehend. The bituminous coal occurs in a series of beds of sandstone, accompanied by shale or argillaceous slate, abounding with vegetable impressions and resting on secondary limestone containing fossil remains. In the neighbourhood of the coal mine is found abundance of iron ore, of that species which is called ironstone or argillaceous iron ore, precisely of the same character as that which accompanies the beds of coal in England.

Graphite, or plumbago, commonly but improperly called black lead, occurs extensively in primitive and transition rocks; from that which is obtained in New York, excellent pencils have been made. There are also numerous localities of petroleum, or mineral oil. It usually floats on the surface of springs, which in many cases are known to be in the vicinity of coal. It is sometimes called Seneca or Genesee oil. In Kentucky, it occurs on a spring of water in a state sufficiently liquid to burn in a lamp; it is collected in considerable quantities, and sold at twenty-five cents, or about one shilling, sterling a gallon.

Salt appears to be very abundant in the United States. We have already noticed the indications of a gypsum and rock salt formation along the east and south-east boundaries of the Mississippi Valley bordering on the transition rocks of the mountain chains, and in strata identical with the saliferous sandstone of Europe; and through the whole extent of this line, from the state of New York across the Mississippi, into the Arkansas country, salt-works have been more or less successfully undertaken. The salt, however, has never been found in the mass; it

is obtained from springs, or more frequently from wells or borings made for the purpose. The brine varies considerably in its strength. Professor Eaton has suggested doubts whether masses of salt really exist. He conceives that an apparatus for the spontaneous manufacture of salt may be found within the bosom of the earth, in those rocks which contain the necessary elements; and his opinion has the support of an experiment which we shall give in his own words. "I took a specimen of the rock called water limestone from a hill adjoining Nine-mile Creek, a few miles west of the Onondaga salt-springs. If this specimen be pulverized and examined ever so minutely, it presents nothing to the senses resembling common salt, (muriate of soda.) I do not mean that the elementary constituents can not be found in it, but I do not propose here to have any reference to a chemical analysis of the rock. On exposing a fresh fracture of a specimen from this rock for two or three weeks in a damp cellar, it shoots out crystals of common salt, sufficient to cover its whole surface. This proves conclusively, that one rock at least, reposing over the floor of the salt springs, contains in itself the materials for the spontaneous manufacture of salt. And there may be many kinds of rock besides the water limestone, which contain the elementary constituents of common salt." Subsequently, however, Mr. Eaton has found reason to think that salt has existed in a solid state in cubical crystals, the hollow forms of which he discovered abundantly in the lias and saline rock of the west, and it seems still to be highly probable that masses of salt exist in the neighbourhood of the salt-springs. The brine contains, besides the muriate of soda, a considerable proportion of muriate of lime and magnesia. Recently also bromine has been detected in the brine of Salina by Dr. Silliman.

In addition to those which are strictly saline, mineral waters of various properties are of frequent occurrence in the United States. Our notices of them in this department of our work must be chiefly confined to their mineralogical character. The mineral waters of Sarátoga, which have become so celebrated for their medicinal qualities, are situated in a low marshy valley, along the termination of a ridge of secondary limestone; they discover themselves in a bed of blue marl, which covers the valley throughout its whole extent, and to an unknown depth. On digging into this marl, to any considerable distance, in almost any direction, a mineral water is sure to be found; in some places, at the depth of six or eight feet, it is discovered issuing from a fissure or seam in the underlying limestone, while at other places, it seems to



proceed from a thin stratum of quicksand, which is found to alternate with the marl at distances of from ten to forty feet; at this depth the marl is interrupted by a layer of boulders of a considerable size; beyond which no researches have yet been made. All the mineral fountains that have yet been examined in this valley, and there are more than twenty, are found to possess uniformly the same qualities, differing only in what is usually termed their strength, or, in other words, in the quantities of the articles which the water of each is found to hold in solution. They belong to a class which may with propriety be styled the *acidulous saline chalybeate*. The best analyses agree in demonstrating that they contain the following ingredients, viz.—carbonic acid, muriate of soda, carbonate of soda, carbonate of lime, carbonate of magnesia, and carbonate of iron, together with a very minute quantity of silica and alumina. To these ingredients recent investigations have added iodine, hydrobromic acid, and potash. The surface of Hamilton spring, at Saratoga, is constantly agitated by the escape of large quantities of gas; and as the water passes off, it leaves on the surface of the earth an abundant deposit of a brownish colour, evidently ferruginous and calcareous. The water, when first dipped from the fountain, is remarkably clear and sparkling, but on standing exposed to the atmosphere, soon becomes turbid. It is saline and acidulous to the taste, and when taken to the quantity of five or six half pints, is usually powerfully cathartic and diuretic. The temperature at the bottom of the well is uniformly at fifty degrees.

One gallon, or 231 cubic inches, of this water, when first taken from the well, contains

Muriate of soda	grains 297.3
Hydriodate of soda	3
Carbonate of soda	19.21
Carbonate of lime	92.4
Carbonate of magnesia	23.1
Oxide of iron	5.39

grains 440.4 together

with a minute quantity of silica and alumina, probably 0.6 of a grain, making the solid contents of a gallon amount to 441 grains.

Carbonic acid gas	316 cubic inches.
Atmospheric air	4

Gaseous contents in a gallon 320 cubic inches

At Albany, in the summer of 1826, in boring for pure water for a brewery, a mineral spring was accidentally opened. The sensible qualities of this water have a great resemblance to those of the Congress spring at Saratoga. Its temperature is uniformly from 51° to 52° of Fahrenheit, at all seasons of the year; its specific gravity, when taken with great care and after repeated trials, was found to be as

1010 to 1000. The taste of the water is purely saline, somewhat pungent, and not at all disagreeable; but those who are best acquainted with it think it by no means so stimulating and pungent as the waters of the Congress spring; it has no sensible chalybeate taste, and no perceptible smell which could lead to the suspicion of its holding sulphuretted hydrogen gas in solution. As to the gas which ascends through the tube, and has been described as inflammable, it appears to be either hydrogen or carburetted hydrogen, similar to the gas which is so frequently observed to accompany the saline springs in the state of New York, but which passes through the water without giving it any sensible properties. When this water, which is at first so clear and pellucid, is allowed to remain for a few hours in a glass, the gas which is extricated from it adheres, in the form of innumerable air bubbles, to the inside surface of the glass; in a short time after, the water loses its transparency, a thin pellicle appears on its surface, which has a slightly iridescent appearance; by degrees the water becomes perfectly opaque, the pellicle falls to the bottom, which, as well as the sides of the glass, is covered with a light brown powder, which adheres firmly to it. The water, after this, recovers its former transparency, but loses its agreeable, pungent, and acidulous taste, becoming perfectly vapid, and having no other taste but that of a solution of marine salt in water. Dr. Mead gives the following comparative analysis of the mineral contents in one pint of water of Congress spring at Saratoga, the public well at Ballston and the new spring at Albany:

Congress Spring.

	Grs.
Muriate of soda	51 1-2
Carbonate of lime	13 3-4
Carbonate of magnesia	8 1-2
Muriate of lime	1 3-4
Muriate of magnesia	2 1-2
Oxide of iron	1-4
Total	78 1-4

Carbonic Acid Gas.

Cubic inches	33
------------------------	----

Public Well, Ballston.

	Grs.
Muriate of soda	21
Carbonate of lime	4 5-8
Carbonate of magnesia	5 5-8
Muriate of lime	1 3-4
Muriate of magnesia	3-4
Oxide of iron	1-2
Total	34 1-2

Carbonic Acid Gas.

Cubic inches	36 1-2
------------------------	--------

<i>Albany Water.</i>		Grs.
Muriate of soda		59
Carbonate of soda		5
Carbonate of lime		4
Carbonate of magnesia		1 1-2
Carbonate of iron		1
Muriate of lime		1-2
Total		71

Carbonic Acid Gas.

Cubic inches	26
------------------------	----

Professor Hosack, of New York, thus writes on the medicinal qualities of the Ballston waters :

"No mineral waters in the United States enjoy an equal celebrity with those of Ballston and Saratoga, and as none are more generally resorted to by invalids, perhaps none are more indiscriminately used. Correctly to ascertain their properties becomes, therefore, an object of importance to every physician.

"Several analyses of the Ballston waters have been communicated to the public ; according to the analysis made by Mons. Caizalet, a teacher of chemistry at Bordeaux, a bottle of the Ballston water containing 25 ounces afforded,

1. Carbonic acid, three times its volume.
2. Muriate of Soda, 31 grains.
3. Super saturated carbonate of lime, . . 22 grains.
4. Muriate of magnesia, 12 1-2 grains.
5. Muriate of lime, 5 grains.
6. Carbonate of iron, 4 grains.

"This subject has also recently received the attention of Dr. William Meade, of Philadelphia, a gentleman well skilled in practical chemistry, and who has made frequent visits to the springs both of Ballston and Saratoga, for the express purpose of making an accurate analysis of those celebrated waters.

"The reader, desirous of further information on this subject, is referred to the work published by Dr. Meade, entitled, 'An Experimental Inquiry into the chemical properties and medicinal qualities of the principal mineral waters of Ballston and Saratoga.'

"The Ballston waters have been long known to yield a great quantity of fixed air, and to hold in solution a large portion of iron. By the analysis now given, it appears that they yield a much larger proportion of fixed air, and that they contain a greater quantity of iron than any other mineral water that has hitherto been discovered, not excepting that of Vichy, in France, one of the strongest chalybeate waters in Europe. But it appears, that they also contain another substance, viz. the muriate of lime, which, with the other ingredients with which it is associated, promises to be of great and extensive utility.

"We are accordingly, from the above analysis, induced to ascribe more virtues to the Ballston waters than physicians have generally believed them to possess. Although much is due to exercise, change of air, and an agreeable occupation of the mind, which the amusements of watering places usually afford, I have no doubt, from the sensible effects produced upon the system by the waters themselves, that they are also productive of great good in a variety of diseases, some of which I shall now briefly enumerate.

"1st. From the effects of the Ballston waters, as a strong chalybeate, they may be employed with advantage in most diseases of debility, whether directly or indirectly such. But in those complaints which are attended with an increased excitement of the whole system, or with local inflammation, they are manifestly prejudicial. These principles are deducible from the qualities of the waters alone ; but they are also confirmed by the experience and observation of physicians who have attended to their operation.

"Accordingly, in intermittent fever, dropsy, dyspepsia, hypochondriasis, and hysteria, connected with, or proceeding from, debility of the digestive organs ; in paralysis, chronic rheumatism, gout, in its chronic state, chlorosis, fluor albus ; in suppression of the menses when arising from weakness, in worms, and in other diseases of debility, whether of the intestinal canal, or of the whole system, the Ballston waters have been long and justly celebrated. On the other hand, in a plethoric state of the system, as in pregnancy, in consumption of the lungs, inflammation of the liver, acute rheumatism, dysentery, and other diseases of an inflammatory nature, in which they are oftentimes resorted to, they invariably do injury. We may, perhaps, except from this remark a species of consumption which arises in females about the time of puberty, in which, from want of energy in the system, menstruation does not take place at the period in which it usually appears ; dyspepsia ensues, followed with general irritation of the nervous system, pain in the breast, cough, sometimes hemorrhage from the lungs, and ultimately terminating in confirmed consumption. These consequences have frequently been prevented by a course of iron, and vegetable tonics, aided by generous diet, and exercise, especially riding on horseback. Under similar circumstances, I have no doubt that the Ballston waters may be serviceable in this species of phthisis in its incipient state ; but they should never be employed in diseases of this nature without the advice of a physician.

"2. From the saline impregnation of these waters,

and their operation upon the urinary organs, as well as by perspiration, they are indicated in diseases of the kidneys and bladder, in gout, chronic rheumatism, and eruptions upon the skin, all which diseases are most frequently produced by, or connected with, a morbid condition of the fluids, and an impaired state of the secretions. In these complaints, I have repeatedly prescribed these waters with the best effects.

"Dr. Thacher, the author of 'The American Modern Practice,' a work containing much original and valuable information, concurs in the opinion of the general efficacy of the Ballston waters in diseases of debility, and that they are peculiarly beneficial in calculus and gravel, some cases of which have come within his own particular knowledge—and upon the information of Dr. Powell, whose residence at the springs gave him a free opportunity of ascertaining the fact, he adds, that rarely a case of gravel occurred in which relief was not obtained.

"But according to the foregoing analysis, the Ballston waters contain an ingredient of great value, besides those already enumerated; I mean the muriate of lime. It appears upon the authority of Dr. Beddoes, Dr. R. Pearson, Dr. Wood, and Dr. Schraud, of Vienna, that this substance has lately been discovered to be a remedy for scrofula, which hitherto has been the opprobrium of our profession. It is true, cases have been recorded by Russel and others of the cure of this disorder by the use of sea water. But as it has been ascertained by chemists, that the muriate of lime enters into the composition of sea water, it is very possible that the efficacy of the latter, in that disease, may in part be derived from the muriate of lime which it has been found to contain.

"But as scrofula is usually attended with a general debility of the system, as well as a morbid condition of the fluids, the Ballston waters will probably be found peculiarly serviceable, inasmuch as they possess the means of invigorating the system, at the same time that they contain the antidote to the peculiar virus of that disease.

"But to obtain the benefits of the Ballston waters in any of the diseases which have been noticed, it is necessary that in the use of them, as it regards the time of taking them, the quantity taken, the stage of the disease, and other circumstances which must govern their exhibition, the directions of the physician be particularly attended to. As well might the patient make use of any other article of the materia medica without medical advice, as drink these waters in the manner in which they are usually taken. It is but a short time since that a very valuable life was destroyed by the imprudent use of them during a

state of pregnancy. I was lately consulted by two gentlemen who had left the springs much worse than they had gone to them. The one laboured under dyspepsia, attended with habitual costiveness. Neglecting to relieve his bowels, he commenced the use of the waters; the consequences were, an aggravation of his disease, followed with fever, acute pain in the head, and other symptoms of general excitement. The other person referred to, had come from Virginia, on account of an obstinate chronic diarrhoea, attended with great debility, and general emaciation. Without advice, he immediately began to drink the waters, to the quantity of several quarts daily. The consequences may readily be imagined; an increase of his disease, and a degree of debility from which he with difficulty recovered.

"'This water,' says Dr. Steel, 'if drank in large quantities, or when taken by persons whose stomachs are extremely irritable, operates as a cathartic: it is likewise, in most instances, a powerful diuretic; and like the other strong chalybeates in the vicinity, is of eminent service to an impaired or capricious appetite, and weakness of the assimilating organs in irregular digestion, flatulent distention of the abdomen, anxiety about the præcordia, difficult respiration from sympathy with the stomach, occasional vomiting of viscid mucus,' &c.

"The administration of these remedies, therefore, requires some attention. Upon this subject, the following judicious remarks by Dr. Dyckman, contained in his excellent American edition of Dr. Duncan's New Dispensatory, merit the observance of those who visit Ballston and Saratoga, to obtain the benefits of those waters.

"'The doses must be regulated by the constitution of the patient, the state of the stomach, the nature and stage of the disease, and the effects produced. In large quantities, as from a pint to a quart, they usually operate gently as a cathartic; but in small doses their action is determined more particularly to the kidneys and skin. In general, they should be drank till they produce a slight evacuation from the bowels. Care, however, should be taken never to distend the stomach so as to occasion inconvenience. If from one to two or three pints daily produce no sensible effect, the quantity of fluid will be apt to prove more injurious as a load, than useful as a medicine. In most instances, perhaps, it will be advisable to begin with small quantities, and repeat them often. When taken to an improper extent, particularly if they do not produce some effect as a purgative or diuretic, they not unfrequently occasion much distress and disturbance of the whole system, being

followed by anxiety, headache, or vertigo, perturbation, pains in the stomach and bowels, or spasms. They should not be employed when the stomach and bowels are overloaded, or just before or after meals. When intended to act as an aperient, the proper time for administering them is in the morning, before breakfast. Their operation will be facilitated by the exercise of walking or riding. Taken after a meal, they are less apt to affect the bowels than they are the kidneys and skin.'"

A mineral spring exists in Cliff-street, in the city of New York, of which we find the following analysis :—

Carbonate of ammonia	5.00
Carbonate of lime	29.50
Carbonate of magnesia, (F,) 33.7 + 1 gr. (E,)	34.70
Carbonate of potassa	3.00
Chloride of magnesium	1.92
Chloride of sodium, (C b,) 4.98 grs. + 52.6 grs. (G, b,)	57.58
Sulphate of magnesia	6.00
Sulphate of soda	5.46
Sulphate of lime	0.25
Silica	0.20
Oxide of iron, (D,) (F,)	1.55
Extractive matter	5.

150.16

GAZEOUS MATTER.

Carbonic acid	Cub. In. 68.57
Atmospheric air	4.57

73.14

The American editor may remark, that this Cliff-street mineral spring no longer exists: the whole account seems to have been engendered in error.

At Bedford, in Pennsylvania, there is a very copious supply of mineral water, issuing from the foot of a cliff by no less than seven highly medicinal springs, all within the radius of a stone's throw, and some of them containing iron and sulphur. The Berkely springs, at Bath, in Virginia, are chiefly magnesian.

In order to render the notice by the English editor of the mineral waters of the United States the more satisfactory, the American editor has availed himself of an article recently published by Professor J. W. Francis, of New York, which, while it cursorily notices several of the more conspicuous mineral waters of the United States, includes a particular account of those valuable springs, of a sulphureous character, lately discovered at Avon, in Livingston county, New York. If report be true, few springs of equal importance are known to exist any where. Their curative properties will unquestionably give them a preference over many of those waters which have too long absorbed public attention, but which, from

accidental circumstances, have obtained a popularity which never otherwise could have been claimed for them. Professor Francis assures the editor that he has spoken in terms of moderation of their sanative qualities.

"The experiments and observations which have been made at different periods by various writers on the mineral waters of the United States, if properly grouped together, would constitute a work of great practical utility. This service has indeed been performed, to a considerable extent, by Dr. Bell, of Philadelphia, and a large amount of information on this interesting subject, which was scattered through numerous volumes, may be found in his work on Baths and Mineral Waters.

"Among the earliest papers which have appeared, of this nature, may be mentioned, an analysis of the chalybeate water of Bristol, Pennsylvania, by the late Dr. John De Normandie, of that place, and printed in the first volume of the Transactions of the American Philosophical Society. The investigations of this learned physician, though wanting in the philosophy of modern chemistry, were such as to awaken much public attention to the Bristol water; and some sixty years ago they were deemed to possess properties analogous to those of Bath and Spa: they were at that time largely employed for their curative powers, but have latterly fallen into disuse. So early as about 1789, Dr. Mitchill instituted his first series of experiments on the waters of Saratoga Springs, and subsequently added many pertinent observations on their medicinal qualities. These waters, with those adjacent, at Ballston, are now so universally known to both hemispheres, and so extensively had recourse to, that little more need be said in this place, than to recommend the reader, for the fullest details of chemical analysis and of a practical nature, to the recent work of Dr. Steele. These waters are designated *acidulous saline chalybeates*.

"The Schugl's Hills, or *Schooley's Mountain* water, deserves also to be here noticed. The water of this mineral spring is said to have been known to the aborigines, and to have been employed by them as a remarkable remedy, which they concealed from the whites. Be this as it may: the Schooley's Mountain water is situated in Washington township, nineteen miles north-west of Morristown, and fifty miles from the city of New York. The chemical analysis of it made by Professor Macneven, my late colleague in Rutgers Medical College, furnishes an admirable specimen of this species of philosophical investigation; and were the products of other salubrious medicinal springs, within the United States, examined with a

like minuteness and accuracy, we should have little cause to lament our present imperfect knowledge of this class of products with which our country is so largely enriched. I may be pardoned for dwelling a moment longer on this water. Schooley's Mountain, by geometrical measurement, has been ascertained to be more than fifty-four hundred feet in height, above its immediate base. Dr. Mitchill calculates, by approximation on the falls of water at different mill-dams along the hurrying channel of the Musconet-chunk to its junction with the Delaware, and on the descent thence to Trenton, that the base itself is five hundred feet more above tide water.*

"This mineral spring issues from the perpendicular side of a steep rock, about forty or fifty feet above the level of a brook that gurgles over a rocky bottom, within a few paces of it. The spring discharges a gallon in about two minutes and a half, and the quantity is not observed to vary under any change of season or weather. Its temperature, at its issue from the rock, was found to be fifty-two degrees of Fahrenheit. The bare taste and appearance show that it is a chalybeate; and it is strongly characterized by the peculiar astringency and savour of ferruginous impregnations. The iron is easily separated from the mineral water: its carbonic acid is altogether in a state of combination, and hence it never occasions flatulence, while it proves a corroborant to feeble digestive powers. Hence it is recommended in many chronic diseases and general debility, and especially in calculus and affections of the kidney and bladder. In an instructive case which Dr. Macneven has recorded, the patient took from fifteen to twenty half pint tumblers a day, with most decided benefit; and he informs me, that other examples of its salutary action in other disorders have come within his knowledge and observation.

"The following are the results of Dr. Macneven's analysis.

"Vegetable extract, 92; muriate of soda, 43; muriate of lime, 2.40; muriate of magnesia, 50; carbonate of lime, 7.99; sulphate of lime, 65; carbonate of magnesia, 40; silex, 80; carbonated oxyde of iron, 2; loss, 41, = 16.50.

"The white sulphur springs of Virginia have long enjoyed a distinguished reputation, and are resorted to at the present day, as formerly, by numerous invalids, suffering from disorders of the digestive organs, chronic affections of the liver, the sequelæ of protracted intermittent and remittent fevers, the derangements induced by the preposterous use of mer-

curials, cutaneous diseases, certain female complaints, &c. &c. Where the various disorders are unconnected with inflammatory symptoms, they are pronounced to be of the greatest efficacy. So far as my acquaintance with these waters extends, it coincides with that of the most favourable opinion given in their behalf. Their action on the skin is of singular efficacy and importance. They are somewhat more exciting than ordinary saline sulphureous water. The reproach long ago made, still holds just, that they have not received the attention they merit, as objects of rigid chemical investigation. Dr. Bell's work, already referred to, contains the best exposition I have seen of their composition and remedial qualities. A Virginian is to be excused in lauding, in no common accents, the white sulphur springs: the facts in the case warrant it; and moreover in so doing he only follows his political apostle, Mr. Jefferson.†

"Kentucky boasts of numerous mineral springs of a sulphureous class. Dr. Drake, of Cincinnati, considers those of the Big Bone Spring, or *Salines*, and the Olympian Springs, as the most noted. The water of the Big Bone Spring, he affirms, contains sulphuretted hydrogen, in large quantities, and hold in solution the muriates of soda and lime, and the sulphates of soda or of magnesia. The disorders to which Dr. Drake thinks it more peculiarly adapted, are the torpor, obstruction, or chronic inflammation, produced by acute diseases of the lungs, liver, spleen, kidneys, in short any of the viscera, and which have continued so long that the constitution is exhausted. In these cases, experience has shown them to possess all the efficacy that could be expected in any mineral waters. From a pint to a gallon may be taken, according to the strength of the patient, and its sensible effects on the system. The quantity drank at first should be small, especially by those of reduced habits. These waters do not increase the pulse, but their sensible effects on the alimentary system, kidneys, and skin, are great. The action of the former is very much increased, and the latter is frequently affected in a few days with a violent itching, and an eruption of pimples or pustules, which are now and then connected with large biles.‡

"With these cursory remarks on some of the mineral waters of the United States, we may be the better enabled to estimate the composition and peculiar properties of the *sulphur springs of Avon*. Had the work of Dr. Bell included any account of these waters, I would have forborne to offer the present imperfect observations on the subject; the more so,

* Bruce's Mineralogical Journal.

† See Notes on Virginia.

‡ See Bell on Baths and Mineral Waters, p. 436-7.

as I am still engaged in a series of chemical inquiries, to determine their respective ingredients, assisted by my friend, Dr. Ellet, the late professor of chemistry in Columbia College.

"The Avon springs are situated in Livingston county, state of New York, within a mile of the village of Avon. The village is on the bank of the Genesee river, and is passed through by the great western road from Albany to Buffalo. The soil in its vicinity is of the richest and most productive quality, yielding the cultivator a full reward for his labour: that of the flats, as they are popularly called, consists entirely of alluvial deposit, while the table land presents all the varieties of calcareous and argillaceous mould. The sensibilities of the valetudinarian may here cherish to satiety the beauties of Avon scenery, and the botanist find the richest materials for enlarging his herbarium.

"The Avon springs seem to have been partially known to the Seneca tribe of Indians, who, until within a few years, inhabited a village on the opposite bank of the river, which they called Canawagus. The far famed chief, *Red Jacket*, enumerated them among his remedial measures for the cure of disorders of the skin; and *wasting disorders*, as they were termed, were supposed capable of being removed by their use, even applied externally.* They may now justly be deemed conspicuous among the mineral waters of the state of New York. They at present comprise two springs within about forty-two rods of each other; and are somewhat less than one third of a mile from the Genesee river: they issue from the foot or base of the highlands that border its low grounds. They are denominated the lower and the upper springs; while the former has been for several years known, the latter is but recently, and is preferred by some. I first became personally acquainted with them in the summer of 1827, when they were frequented by a number of infirm visitors. Professor Hadley has lately published an analysis of the upper spring, which seems to have been made with a good deal of accuracy. According to his analysis, one gallon of the water contains, carbonic acid, 5.6 cubic inches; sulphuretted hydrogen gas,

12 cubic inches; carbonate of lime, 8 grains; sulphate of lime, 84 grains; sulphate of magnesia, 10 grains; muriate of soda, 18.4 grains; sulphate of soda, 16 grains; and a small quantity of other matter. According to Dr. Salisbury, a resident at Avon, the weight of the constituents of the water of the lower spring, are as follows: arranged so as to form compounds existing in the water, and calculated for 10,000 parts by weight; are

Carbonate of lime	5.02
United to carbonic acid	1.70
	—6.72
Chloride of calcium	1.44
Sulphate of lime	9.83
Sulphate of magnesia	8.49
Sulphate of soda	2.35
	—28.83
By volume of 10,000 are,	
Hydro-sulphuric acid	4.34
Nitrogen	2.35
Oxygen	25
	—6.94

"Dr. Salisbury adds, the chlorine assigned to calcium as the chloride of calcium is often found in those waters which contain but little saline matter. There remains 00.6 of sulphuric acid, apparently in excess, which is accounted for by the difficulty of separating, accurately, magnesia from the other salts. The quantity of carbonate of lime exceeds the equivalent quantity of carbonic acid necessary to render it soluble in pure water, and this fact affords a probable explanation of the character this water exhibits when tested by coloured paper.

"The volume of water discharged from this spring, Dr. Salisbury further remarks, is the same at all seasons of the year, and does not appear to depend in the least upon atmospheric influence; as nearly as can be ascertained, under existing circumstances, it is fifty-four gallons in a minute. The temperature of the water is invariably forty-five degrees Fahrenheit. The specific gravity 10.018. As it issues from the spring it is very limpid and somewhat sparkling.

"The analysis of these waters, which I caused to be made about two years ago, did not afford satisfac-

* Doubtless this term, *wasting disorders*, included many physical infirmities, whose pathognomonic features greatly differed, and many other different sorts of pulmonary disorganization. Dr. Rush declares that pulmonary consumption is wholly unknown to the North American Indians. It is generally admitted, that in countries where fever and agues prevail, consumption is of rare occurrence. Dr. Dwight also makes this observation in particular reference to the great western country; and it is sufficiently proved that intermittent fever constitutes a great outlet to the lives of our aborigines. But the declaration of Dr. Rush is not tenable. Hunter, who may be deemed good authority on the subject, re-

marks, that pulmonary consumption among the North American Indians is established by too many familiar facts. The celebrated chief, Red Jacket, in an interview I had with him at his reservation, near Buffalo, in September, 1823, gave me the particulars of the cases of no less than seventeen of his relatives, (including, I think, ten or eleven of his own children,) who had died of pulmonary consumption. He was quite descriptive in his statement, and seemed sufficiently qualified to make a number of very fair distinctions in relation to the matter. This digression from our more immediate subject will probably be excused, on account of the curious character of the facts which it records.

tory evidence of either containing iodine. Nevertheless, a strong probability is, that both iodine and bromine enter into their constitution. Dr. Usher, of New York, and Dr. Steele, of Saratoga, have lately found iodine in the congress water at Saratoga; Dr. Steele has discovered a trace of bromine, the hydrobromite of potash, in the water of Hamilton spring. It is well known that iodine exists but in the smallest quantity in the waters in which it has, as yet, been discovered; and that in waters which have been repeatedly and carefully analyzed, it has escaped detection. This occurrence took place with the saline springs of Sales, in Piedmont, from which, so recently as in 1820, M. Angelina procured iodine. There are good reasons to suppose that waters so amply impregnated with sulphurous matter, as those of Avon springs, may contain both iodine and bromine.*

"The value of these waters has," says Dr. F., "within the past three or four years, been justly and highly appreciated, and induced numerous valetudinarians to partake of them. They may be ranked among the most powerful and remedial waters yet made known; but, like other active medicinal agents of a similar character, they are liable to great abuse, and in certain states of the system, may prove seriously detrimental. Possessing active emetic and cathartic properties, particularly the waters of the spring last discovered, it is requisite that caution be exercised not to indulge in them too freely at first; and as they are more or less exciting, they also demand that previous to commencing their use, the system should, in many cases at least, be first relieved by the employment of some efficient cathartic. This precaution is of saving importance, and I have known a disregard to it, to lead to almost entire disappointment in anticipated benefit, for many weeks; while, on the contrary, the general powers of the system being relieved by antiphlogistic and aperient means, the waters have often accomplished all that could be desired, in a comparatively short period. As in the administration of all sulphurous waters, so also those of Avon should be closely watched, and their use for a while suspended, when febrile irritation or undue local determinations occur. This is most apt to take place in habits preternaturally full, or when local inflammation exists: where a congested condition of the viscera happens, their best adjuvants are mild mercurials or saline cathartics.

"In disorders of the digestive organs, arising from torpor of the primæ viæ, hepatic obstructions, and

affections of the glandular system; in rheumatism and gout, and in many of the most formidable of cutaneous affections, these waters have secured the confidence of those who had previously suffered to the severest degree from these maladies. In many forms of ill-conditioned ulcers, their utility as a wash is abundantly manifest: while the invalid uses them internally, he may at the same time have recourse to them for some twenty or thirty minutes, on alternate days, in the form of a warm bath, the temperature of which may vary from 96° to 98° Fahrenheit.

"In pulmonary disorders their salutary agency is not yet confirmed, and further experience must determine their merits: if employed, their use is to be regulated by the nicest precepts of the healing art, in as much as these waters are eminently calculated to produce powerful changes on the system by their active operation. In the incipient and active stage of pulmonary irritation, it becomes our duty to precede their employment by venesection, and the other customary means of depletion, analogous to the practice we have recourse to with the Ballston or Congress waters. The same observation applies to hemoptysis, to acute disorders of the digestive organs, liver, and other viscera. The direful consequences which inevitably occur in such cases, from the Saratoga waters, when these cautions are not heeded, are too painfully known to be dwelt upon in this place.

"In several forms of female disease, the Avon waters can be safely and efficaciously recommended. In many cases of difficult and painful menstruation, in chlorosis, and in certain complaints mainly depending on weakness, after a judicious course of preparatives, such as a careful clinical observer would enforce, these waters present themselves vested with sanative powers. Aware of the Protean character of constitutional disease depending upon uterine irritation, and chronic affections of that organ, I have no doubt, that future investigation will demonstrate that the Avon water, possess many advantages over other chalybeates in cases of this nature. I would extend the same remark to the complex affections connected with ovarian disease.

"I have for several years past recommended the Avon waters; to those of the lower spring I give the preference: they have proved available in the severest cases of rheumatism and gout, and in some affections of the urinary organs. After the prelimi-

* See Gairdner on Mineral and Thermal Springs. Very generally associated with iodine, says Dr. Gairdner, is the congener substance, bromine. Balard first discovered it in sea water, and

subsequently it has been detected in several saline springs; it exists almost always as a hydro-bromate of magnesia.

nary management of the case by depletory means, and appropriate alvine aperients, the use of the water for a few days, or perhaps weeks, has wrought an alteration the most gratifying, evinced by improved appetite, increase of flesh, and invigorated health; and while the body receives the impress and partakes of all the advantages of increased physical energy, a corresponding improvement marks the capacity of the intellectual powers. When taken internally, the Avon waters prove cathartic, diuretic, diaphoretic, and tonic. They thus constitute an effective alterative; and in as much as their tonic properties are the results of their general influence on all the emunctories of the body, particularly those of the cutaneous and urinary functions, they claim to themselves qualities which are denied to the entire class of tonics and stimulants strictly so called, and the mischief invariably induced by these last named articles, wherever local congestion exists, are entirely guarded against by the waters of Avon. Their manifestations on the surface are conspicuous.

"I am not able to say from experience that in this respect they surpass, or even equal, the white sulphur waters of Virginia; but am scarcely ready to believe that these last fairly boast of a superiority in their action on the skin. Their extraordinary alterative effects must unquestionably be greatly owing to the changes they induce on the cutaneous surface.

"In speaking of the constitutional influence of the Avon water, Dr. Salisbury, who has had much experience with them during a residence at the springs for four summers, has the following remarks: 'The operation of Avon water upon the human constitution is modified by the quantity drank in a given time, and by the constitution, habit, and disease of the individual. Generally speaking, four or six half pint tumblers of the water, drank during the day, produce a mild cathartic effect, and under its long continued exhibition to this extent, no debility ensues, but, on the contrary, the appetite and strength are very much increased. In very large doses, as from ten to fifteen tumblers a day, it operates powerfully upon the bowels, kidneys, and skin. A moderate use of this water, persevered in for a considerable length of time, will insure to it a powerfully alterative effect in cases where there is no acute inflammation.'

"A judicious mode of commencing the use of the Avon water, is to take six or seven half pint tumblers during the twenty-four hours: a couple of tumblers may be advantageously drunk before breakfast, and some two or three hours after that meal, the same quantity may again be taken, and an additional

tumbler full or two in the afternoon. To the sense of smell, they present the usual properties of sulphuretted hydrogen gas, but in a very small degree; they are nowise oppressive to the digestive organs. Some, however, take them in larger quantity, and oftener repeat the draught. Others, again, never use them until after the first meal. Like the Ballston and Saratoga waters, they are sometimes drunk to a most pernicious extent. It is expedient, therefore, in all cases, to regulate their administration by their immediate effects, and every regard must be paid to age, sex, disease, constitution, and individual peculiarity. To guard against undue local determination, either cerebral, thoracic, or visceral, will always become a matter of professional duty.

"All observations of a dietetical character are here designedly forborne: and I need scarcely add," concludes Dr. Francis, "that as these waters are armed with such potent qualities, their influence on the system must be either prejudicial or beneficial, and that they demand, in all cases, the advice of the physician."

To this account of the principal mineral waters, must be added a notice of the various gaseous matters which are likewise met with in the United States. In the state of New York, nitrogen gas is found issuing from the earth. The gas appears to issue from every part of a low hill comprising four or five acres of ground; for wherever there is water, it becomes manifest by bubbling through it. It issues abundantly through three springs, from the clean gravelly bottom of each; but it does not combine with the water in either of them. The gas probably accompanies the water from a considerable depth, since the water of the springs is not increased by the greatest spring and fall freshets. Sulphuretted hydrogen gas escapes in large quantity from varieties of argillite and graywacke, containing soft and fine-grained iron pyrites, by the decomposition of which it is produced. It burns along the surface of the water from which it issues with a bright red flame by day-light. The most interesting water of this kind is Lake Sodom, in a place nicknamed Satan's Kingdom. The bottom is grass-green ferriferous slate; the sides are white shell marl, and the brim is black vegetable mould. The water is perfectly limpid. The whole appears to the eye like a rich porcelain bowl filled with limpid nectar; but to the taste it is the true Harrowgate water, and readily convinces the visiter of the fitness of the name. Carburetted hydrogen gas issues from a stream in the neighbourhood of the Erie canal, at the rate of a gallon per minute, through the gravelly soil at the bottom. The carbonic acid gas, which is so abundant in the Saratoga springs, is

produced from an argillite, which contains large quantities of fine granulated pyrites and finely disseminated calcareous spar. It is a well-known fact, that this variety of pyrites produces sulphuric acid by the aid of water. The acid being in immediate contact with the spar, gypsum is produced, and carbonic acid is disengaged at considerable depths in the earth, and under great mechanical condensation, which causes its combination with water in such large proportions. When the water issues from the earth, the pressure which forces it up to the surface being taken off, it parts with that portion of the carbonic acid which is combined with it by the effect of pressure; while the solution of the carbonate of lime, which is caused by the carbonic acid, can no longer be continued, so that it is deposited in the form of tufa. Such is the origin of what is called the High Rock at Saratoga. Sulphuric acid, in large quantities, is produced in a diluted and in a concentrated state in the town of Byron, Genessee county, thirty miles west of Genessee river, and ten miles south of the Erie canal. Here is a hillock 230 feet long and 100 feet broad, elevated about five feet above the surrounding plain. It consists of a kind of ash-coloured soil, containing immense quantities of exceedingly minute grains of iron pyrites. It is mostly covered with a coat of charred vegetable matter, four or five inches thick, and as black as common charcoal. The same charred matter extends some distance from the base of the hillock on all sides. It appears as if it had been recently burned over, though it is in a meadow where no other traces of fire exist. Its charred state is caused wholly by the action of the sulphuric acid. Several holes have been dug in the hill, which now contain turbid diluted sulphuric acid, as do the depressions in the meadow ground surrounding it. Should curiosity or interest induce the proprietor to dig a trench about it, or to make an artificial pond on one side, which might be occasionally drained and cleaned, a bath of diluted sulphuric acid might be constructed. The strength of the acid increases in a drought. It appears to be perfectly concentrated, and nearly dry, in its combination with the charred vegetable coat. In this state it is diffused throughout the whole piece of ground, which presents a charred appearance to the depth of twelve or fifteen inches, and in some places three or four feet. It is everywhere the strongest at the surface. The strength of the acid combined with the vegetable matter, and several other circumstances enumerated, make this locality very interesting. But there is another, about 100 rods west of Byron hotel, being two miles east of this, which, in one point of view,

is still more remarkable; it is a spring, which issues from the earth in quantities sufficient for turning a light grist mill. Such an immense sulphuric acid laboratory is here conducted by nature, that all the water which supplies this perennial stream is sufficiently acid to give the common test with violets, and to coagulate milk. The continual formation of the sulphates of lime, iron, and magnesia, is also traced to a considerable extent.

It is impossible for us, consistently with the character of the present work, to enter more minutely into the peculiarities of American mineralogy. We can only say, that it affords much both to adorn the cabinet of the curious, and to enrich the collection of the scientific, as well as to furnish materials for commerce, manufactures, and the arts. There are found crystals of great beauty, we might almost say magnificence; for their dimensions, in many cases, are certainly extraordinary, and seem to correspond with the gigantic scale on which so many of the works of nature there have been produced. We have been struck with the testimony of Mr. Schoolcraft to the recent formation of quartz crystals.* They have been found, it appears, upon the handle of a spade, and the edge of some old shoes, which had been left for some years in an abandoned lead mine of the Shawnee Mountains. Many minerals which are rare in Europe, are found abundantly, and often in finer forms, in the United States; some, which have subsequently been detected elsewhere, were first discovered there, and not a few may still be claimed by that country as its peculiar treasure. We shall now close this chapter with the observation of Dr. Mead, that in general a great resemblance can be traced between the minerals of North America and those which have been found in the north of Europe, particularly in Norway and Sweden. This resemblance is stated to exist, not merely in the properties of the minerals themselves, but in their geological character and geognostic situation throughout the whole series. It is observed more particularly in those specimens which are found to accompany the primitive formation at Arendal, in Norway; it is not confined, however, to the primitive range of mountains alone, as the same resemblance can be frequently traced, on comparing American minerals with those of Piedmont, and even of the Hartz Mountains. Among the principal minerals of the north of Europe, there are none which are of more importance than the ores of iron, for which Norway and Sweden are so remarkable; and every variety of this mineral which

* Travels in Missouri.

has been met with there, has been found in the same class of rocks in America, in the greatest abundance, and of equally good quality. Titanium is one of those metals which have been found more particularly in the north of Europe. It is said to occur frequently in those primitive aggregates which contain beds of magnetic iron ore, associated with augite, scapolite, epidote, and hornblende, precisely the same rocks in which we find it in this country. There is scarcely any part of Europe where a greater variety of augites are found, than in Norway and Sweden; nor can there be any class of minerals in which the similitude between the specimens from those countries and America is more striking.

CHAPTER III.

BOTANY.

THE vegetation of the United States is as various as the climate and the soil. In the Floridas grows a majestic species of palm, (*chamærops palmetto*;) and the orange, the cotton, the indigo, and even the sugar cane, may be cultivated there to great perfection and advantage. In the Carolinas and the Floridas the eye of the traveller is charmed with the beauty and grandeur of the forest trees, the various species of evergreen oak, the numerous kinds of pine, walnut, and plane, the majestic tulip tree, (*liriodendron tulipifera*), the curious deciduous cypress, and the superb magnolias. A different vegetation occurs in the more northerly of the states; and what renders the botany of this district peculiarly interesting to the British naturalist is, that a very large proportion of its vegetable productions may be assimilated to our own climate. The oaks and firs of this region now decorate many of our plantations and pleasure grounds; and as the quality of their timber comes to be better known and appreciated, may well occupy a conspicuous place in our woods and forests. Our shrubberies owe their greatest beauty to the various species of kalmia, azalea, rhododendron, robinia, cornus, sambucus, ceanothus, and lonicera, to the syringa, the flowering raspberry, and a hundred others, which flourish as if they were the aboriginal natives of our soil; whilst the gardens of the curious are indebted for many of their choicest productions to the herbaceous plants of North America, the greater number being remarkable for the brilliancy of their blossoms, and not a few, such as the dionæa and sarra-cenia, being ranked as amongst the most singular of all vegetable productions in their structure.

In the rapid survey we shall have to take of this wide and interesting field, our attention is naturally turned, in the first instance, to the forest or timber trees. We have already seen how large a portion of territory is covered with native forests, among which, varieties of the oak, the walnut, the maple, the birch, the ash, the elm, the chestnut, the beech, the pine, and the cypress, are the most prominent. It is a general observation, that the trees of the United States are larger, taller, and more of them useful for timber, than those of Europe. As to height, it is observed by Michaux, that, while in France only thirty-seven species of trees arrive at thirty feet, in the transatlantic republic, one hundred and thirty exceed that elevation. A general idea of the American forest has already been given; we shall now select the principal trees for more particular notice.

In the greater part of North America, as well as in Europe, there is no tree so generally useful as the oak. It seems also to have been multiplied in proportion to its utility, since it is indigenous to many climates, and diversified into many species. In America are found forty-four species, which are all comprised between the 20th and 48th degrees of north latitude; in the old continent are enumerated only thirty, which are scattered on both sides of the equator, beginning at the 60th degree north. Some of the species in the United States are small, scarcely larger than shrubs; but others are of great size and beauty, reaching an elevation of from sixty to eighty feet. The white oak is pre-eminent among these. It is a larger and handsomer tree in the Mississippi valley, than in the Atlantic country; but is less firm, hard, and durable. The same may be said of the swamp white oak, (*quercus aquatica*), which grows of a prodigious height, size, and beauty. The black oak, with large and small leaves; the yellow oak, and the post oak, grow on cold, level, wet, and clayey lands. The last receives its name from the durability of posts made of it in the ground. It is said to be the most durable timber of the oak kind in the upper country for boat and ship building. South of thirty-one degrees, in the lower country along the coast of Florida, extending into the interior from sixty to a hundred miles, and along the shore of Louisiana for half that depth, is the region of the live oak, (*quercus sempervirens*.) It is not found west of the Sabine. It is not a tall, but a spreading tree, with long lateral branches, looking at a distance like an immense spread umbrella. It is extremely hard, compact, and difficult to cut; and when green, is so heavy as to sink in the water. It is almost incorruptible. The islands on the shore of the gulf furnish this tree in

abundance. It is so difficult to cut down, to burn, or otherwise to clear from the soil, that in these islands, which have recently begun to be in request as sugar lands, this tree, elsewhere considered so valuable for ship timber, is regarded as an incumbrance though still valuable for its acorns, affording the finest range for swine. The value of this timber in ship-building is well known. Its trunk is sometimes undivided for eighteen or twenty feet, but often ramifies at half that height; and at a distance, it has the appearance of an old apple-tree or pear-tree. The live oak does not afford large timber; but its wide and spreading branching summit makes amends for this disadvantage, by furnishing a great number of knees, of which there is never a sufficient quantity in the dock-yards. The consumption has become threefold within twenty years, in consequence of the growing development of American commerce: hence the price has doubled, and the species is rapidly diminishing. The clearing of the islands for the culture of cotton, which they yield of a superior quality, has contributed greatly to its destruction. It is already difficult to procure sticks of considerable size in the southern states. As the live oak, from the peculiarities of its constitution, is multiplied with difficulty, Michaux considers its disappearance throughout the United States, within fifty years, as nearly certain. It will then be found only in the form of a shrub, like the *quercus ilex*, which formerly skirted the southern coast of France and Italy.

In the variety of trees which compose the forests of North America east of the Mississippi, the walnut ranks after the oak among the genera whose species are most multiplied. In this particular, the soil of the United States is more favoured than that of Europe, to no part of which is any species of this tree indigenous. There are distinguished in the United States ten species of walnut, and others are expected to be discovered in Louisiana. There is room to hope, also, that species may be discovered susceptible, like the pacanenut, of speedy melioration, by the aid of grafting and of attentive cultivation; to which consideration some weight is given by the fact, that the fruit of the common European walnut, in its natural state, is harder than that of the American species just mentioned, and inferior to it in size and quality. Throughout the United States, the common name of hickory is given to some species of walnut. This common appellation is due to certain properties of their wood, which, however modified, are possessed by them all, in a greater degree than by any other tree of Europe or America. The grain of the wood is coarse and open. Its chief properties are great weight,

strength, and tenacity, a speedy decay when exposed to heat and moisture, and peculiar liability to injury from worms. According to these prominent excellencies or defects, the uses of their wood are determined. Hickory timber is employed in no part of the United States in the building of houses, because it is too heavy, and soon becomes worm-eaten. But if its defects forbid its employment in architecture, its good qualities, on the other hand, render it proper for many secondary uses, which could not as well be subserved by any other wood. Of the numerous trees of North America east of the Apalachian Mountains, none except the hickory is perfectly adapted to the making of hoops for casks and boxes. For this purpose, vast quantities of it are consumed at home, and exported to the West India islands; and when it is considered how large a portion of the produce of the United States is packed in barrels, an estimate may be formed of the necessary consumption of hoops. All the hickories are very heavy, and in a given volume, contain a great quantity of combustible matter; they produce an ardent heat, and leave a heavy, compact, and livid coal. In this respect, no wood of the same latitude in Europe or America can be compared to them. The use of the young hickories for hoops, and of the old for fuel, threatens the speedy extermination of them, without much care: the more so, as they are of slow growth, and never sprout twice from the same root. Pignut hickory is loaded with a nut whose shell is softer than an acorn, and the meat to the pressure of the fingers yields a copious oil, of use in the finer kinds of painting. It is acrid and bitter to the taste. The large walnut is a fruit of the size of an apple, and is common in the middle regions of the central valley. The pecan, or pacanenut, is found far up the Mississippi and Illinois, and thence to the gulf of Mexico. It is a tree of beautiful form and appearance, and the most useful of the whole class, except the black walnut, for building and for rails. Its nut is long, cylindrical, and olive-shaped, with a shell comparatively soft. The meat lies in two oblong lobes, is easily taken out entire, and excels all other nuts in delicacy of flavour. Unfortunately it soon becomes rancid, and is seldom found in the Atlantic country in its original perfection. The black walnut is a splendid tree, and often grows to a great size. Its nuts much resemble those of the white walnut, or what is called butter-nut in the northern states. It is much used in the middle regions of the country for ornamental finishing of houses, and cabinet furniture; and when rubbed with a weak solution of nitric acid, can be distinguished from mahogany only by an experienced eye.

The maples in general are lofty and beautiful trees, capable of enduring an intense degree of cold. They form in the north of the old and of the new continent extensive forests, which, with those of the beech, appear to succeed the spruce, the larch, and the pine, and to precede the chestnut and the oak. The North American species are more numerous than those of Europe. The wood speedily ferments and decays when exposed to the weather; it is liable to be injured by worms, and hence it is unfit for building: it possesses properties, however, which compensate in part for these defects, and which render it useful in the arts and in domestic economy. Perhaps the most interesting tree of this genus is the sugar maple, which covers a greater extent of the American soil than any other species of this genus. It flourishes most in mountainous places, where the soil, though fertile, is cold and humid. Besides the parts where the face of the country is generally of this nature, it is found along the whole chain of the Alleghanies to their termination in Georgia, and on the steep and shady banks of the rivers which rise in these mountains. The sugar maple reaches the height of seventy or eighty feet, with a proportionate diameter; but it does not commonly exceed fifty or sixty feet, with a diameter of twelve or eighteen inches. Well-grown thriving trees are beautiful in their appearance, and easily distinguishable by the whiteness of their bark. When cut at the proper season, it forms excellent fuel, and its ashes are very rich in the alkaline principle. The work of making sugar from the juice of the maple is commonly commenced in the month of February or the beginning of March, while the cold continues intense, and the ground is still covered with snow. The sap begins to be in motion at this season, two months before the general revival of vegetation. In a central situation, lying convenient to the trees from which the sap is drawn, a shed is constructed, called a sugar camp, which is destined to shelter the boiler, and the persons who tend them, from the weather. An auger three quarters of an inch in diameter; small troughs to receive the sap; tubes of elder or sumee eight or ten inches long, corresponding in size to the auger, and laid open for a part of their length; buckets for emptying the troughs and conveying the sap to the camp; boilers of fifteen or eighteen gallons capacity; moulds to receive the syrup when reduced to a proper consistency for being formed into cakes; and, lastly, hatchets to cut and split the fuel, are the principal utensils employed in the operation. The trees are perforated in an obliquely ascending direction, eighteen or twenty inches from the ground, with two

holes four or five inches apart. Care is taken that the augers do not enter more than half an inch within the wood, as experience has shown the most abundant flow of sap to take place at this depth. It is also usual to insert the tubes on the south side of the tree. A trough is placed on the ground at the foot of each tree, and the sap is every day collected, and temporarily poured into casks, from which it is drawn out to fill the boilers. The evaporation is kept up by a brisk fire, and the seum is carefully taken off during this part of the process. Fresh sap is added from time to time, and the heat is retained till the liquid is reduced to a syrup; after which it is left to cool, and then strained through a blanket, or other woollen stuff, to separate the remaining impurities. Three persons are found sufficient to tend 250 trees, which give a thousand pounds of sugar, or four pounds from each tree. The sugar thus manufactured is superior to the brown sugar of the colonies, at least to such as is generally used in the United States; its taste is as pleasant, and it is as good for culinary purposes, and when refined, it equals in beauty the finest sugar consumed in Europe; it is made use of, however, only in the districts where it is made, and there only in the country. The cheapness of cane sugar, the abundance and excellence of its growth in the lower country, and the diminished expense of transporting it to the upper states in consequence of the multiplication of steam boats, have diminished the demand for what is called country sugar, and the manufacture of it has considerably decreased.

The sycamore, a species of maple, is described as the king of the western forests. It is the largest tree in the woods, and rises in the most graceful forms, with vast spreading lateral branches, covered with bark of a brilliant white. These hundred white arms of the sycamore, interlacing with the branches of the other forest trees in the rich alluvions, where it delights to grow, add one of the distinguishing traits of grandeur and beauty to the forest. A tree of this kind near Marietta measured fifteen feet and a half in diameter. Judge Tucker, of Missouri, cut off a section of the hollow trunk of a sycamore, and applied a roof to it, and furnished it for a study. It was perfectly circular; and when fitted up with a stove and other arrangements, made an ample and convenient apartment. This gigantic section of a tree was conveyed on sleds prepared on purpose, and drawn by a sufficient number of oxen to its resting-place. It is very common to see this beautiful tree, on the margin of rivers, from ten to fifteen feet in circumference.

Seven species of the birch have been discovered in North America, five of which may be ranked among tall trees. The northern extremity of the new continent, like that of the old, appears to be the native climate of this tree, which is less frequent towards the south; and it thus becomes of great interest and importance to man, in regions destitute of many of the larger vegetables. One of the most useful species is the canoe birch, which is abundant in the forests of Maine, New Hampshire, and Vermont, a tract very much resembling Sweden and the eastern part of Prussia. The largest size of the canoe birch is seventy feet in height and three feet in diameter; and the wood is quite equal, if not superior, to the white birch of Sweden and Norway. On trees not exceeding eight inches in diameter, the bark is of a brilliant white, like that of the white birch of Sweden, and, like that too, it is almost indestructible. Trees long since prostrated by time, are often met with in the forests, whose trunk appears sound, while the bark contains only a friable substance, like vegetable mould. This bark, like that of the European species, is applied to many uses: in Canada and the district of Maine, the country people place large pieces of it immediately below the shingles of the roof, to form a more impenetrable covering for their houses; baskets, boxes, and port folios, are made of it, which are sometimes embroidered with silk of different colours; divided into very thin sheets, it forms a substitute for paper; and, placed between the soles of the shoes and in the crown of the hat, it is a defence against humidity. But the most important purpose to which it is put, and one for which it is equalled by the bark of no other tree, is the construction of canoes. To procure proper pieces, the largest and smoothest trunks are selected: in the spring two circular incisions are made, several feet apart, and two longitudinal ones on opposite sides of the tree; after which, by introducing a wooden wedge, the bark is easily detached. These plates are usually ten or twelve feet long, and two feet nine inches broad. To form the canoe, they are stitched together with fibrous roots of the white spruce, about the size of a quill, which are deprived of the bark, split and suppled in water. The seams are coated with resin of the balm of Gilead. Great use is made of these canoes by the savages and by the Canadians, in their long journeys into the interior of the country: they are very light, and are easily transported on the shoulders from one lake or river to another, which is called the portage. A canoe calculated for four persons with their baggage, weighs from forty to fifty pounds; some of them are made to carry fifteen passengers. The black

birch, called also sweet birch, cherry birch, and mountain mahogany, abounds in the middle states, particularly in New York, Pennsylvania, and Maryland; farther south it is confined to the summit of the Alleghanies, on which it is found to their termination in Georgia, and to the steep and shady banks of the rivers which issue from these mountains.

Except the oak, no tree of Europe, or of North America, is so generally useful as the ash. The distinguishing properties of its wood are strength and elasticity; and it unites them in so high a degree, that, for many valuable purposes, it could not be replaced by any other tree. This remark is particularly applicable to the white ash of the United States, which is the largest species, the most multiplied, and the most useful in the arts. It is also the most remarkable for the rapidity of its growth, and the beauty of its foliage. It is most abundant north of the Hudson, and a cold climate seems most congenial to it. It sometimes attains a height of thirty feet, with a diameter of three feet, and is one of the largest trees of the United States.

The elms of the United States, though some of them are of magnificent growth, are not of equal value with the common elm of Europe. The principal species is the white elm, which has been observed from Nova Scotia to the extremity of Georgia, and abounds in all the western states; but it grows most freely in the north-eastern section of the republic. In clearing the primitive forests, a few stocks are sometimes left standing. Insulated in this manner, it appears in all its majesty, towering to the height of eighty or one hundred feet, with a trunk four or five feet in diameter, regularly shaped, naked, and insensibly diminishing to the height of sixty or seventy feet, where it divides itself into two or three primary limbs. The limbs, not widely divergent near the base, approach and cross each other eight or ten feet higher, and diffuse on all sides long, flexible, pendulous branches, bending into regular arches, and floating lightly in the air. A singularity is observed in this tree, which has been witnessed in no other: two small limbs, four or five feet long, grow in a reversed position near the first ramification, and descend along the trunk. The uses of the elm are few and unimportant, and it deserves attention only as the most magnificent vegetable of the temperate zone.

The chestnut does not venture beyond the forty-fourth degree of latitude. It is found in New Hampshire, between the forty-third and forty-fourth degrees, but such is the severity of the winter, that it is less common than in Connecticut, New Jersey, and Pennsylvania. It is most multiplied in the moun-

tainous districts of the Carolinas and of Georgia, and abounds on the Cumberland Mountains, and in East Tennessee. The coolness of the summer, and the mildness of the winter, in these regions, are favourable to the chestnut; the face of the country also is perfectly adapted to a tree which prefers the sides of mountains, or their immediate vicinity, where the soil in general is gravelly, though deep enough to produce its development. The chestnut is little esteemed for fuel, and is not used in the cities of the United States: like the kindred species in Europe, it is filled with air, and snaps as it burns. The coal is excellent; and on some of the mountains of Pennsylvania, where the chestnut abounds, the woods in the neighbourhood of the forges have been transformed into copses, which are cut every sixteen years for the furnaces. This period is sufficient to renew them, as the summer is warmer in America than in Europe, the atmosphere more moist, and consequently vegetation more rapid.

In North America, as in Europe, the beech is among the tallest and most majestic trees of the forest. Two species, the white and the red, so called from the colour of their wood, are found in the United States. A deep, moist soil, and a cool atmosphere, are necessary to the utmost expansion of the white beech; and it is accordingly most multiplied in the middle and western states. Though it is common in New Jersey, Pennsylvania, Maryland, and throughout the country east of the mountains, it is insulated in the forests, instead of composing large masses, as in Genesee, Kentucky, and Tennessee. "I have found the finest beeches," says Michaux, "on the banks of the Ohio, between Gallipolis and Marietta, and have measured several stocks, growing near each other, which were eight, nine, and eleven feet in circumference, and more than one hundred feet high." In these forests, where the beeches vegetate in a deep and fertile soil, their roots sometimes extend to a great distance, even with the surface; and being entangled so as to cover the ground, they embarrass the steps of the traveller, and render the land peculiarly difficult to clear. The red beech is almost exclusively confined to the north-eastern parts of the United States. In the district of Maine, and in the states of New Hampshire and Vermont, it is so abundant as often to constitute extensive forests, the finest of which grow on fertile, level, or sloping lands, which are proper for the culture of corn. It bears a very close resemblance to the beech of Europe.

The pines and the spruces constitute a large and interesting class of American forest trees. The most valuable species is that which is known in England

and the West Indies as the Georgia pitch pine; and which, in the United States, is variously called yellow pine, pitch pine, broom pine, southern pine, red pine, and long-leaved pine, a name which, after Michaux, we adopt. Towards the north, the long-leaved pine makes its appearance near Norfolk, in Virginia, where the pine-barrens begin. It seems to be especially assigned to dry sandy soils; and it is found, almost without interruption, in the lower part of the Carolinas, Georgia, and the Floridas, over a tract more than six hundred miles long, from north-east to southwest, and more than a hundred miles broad from the sea towards the mountains of the Carolinas and Georgia. Immediately beyond Raleigh, it holds almost exclusive possession of the soil, and is seen in company with other pines only on the edges of the swamps, enclosed in the barrens; even there not more than one stock in a hundred is of another species, and with this exception, the long-leaved pine forms the unbroken mass of woods which covers this extensive country. The mean stature of the long-leaved pine is sixty or seventy feet, with a uniform diameter of fifteen or sixteen inches for two thirds of this height. Some stocks, favoured by local circumstances, attain much larger dimensions, particularly in East Florida. The timber is very valuable, being stronger, more compact, and more durable, than that of all the other species of pine; it is besides fine grained, and susceptible of a high polish. Its uses are diversified, and its consumption great. But the value of the long-leaved pine does not reside exclusively in its wood: it supplies nearly all the resinous matter used in the United States in shipbuilding, with a large residue for exportation to the West Indies and Great Britain; and in this view its place can be supplied by no other species, those which afford the same product being dispersed through the woods, or collected in inaccessible places. In the northern states, the lands, which, at the commencement of their settlement, were covered with the pitch pine, were exhausted in twenty-five or thirty years, and for more than half a century have ceased to furnish tar. The pine-barrens are of vast extent, and are covered with trees of the finest growth, but they can not all be rendered profitable, from the difficulty of communicating with the sea. Formerly tar was made in all the lower parts of the Carolinas and Georgia; and throughout the Floridas vestiges are everywhere seen of kilns that have served in the combustion of resinous wood; but, at present, this branch of industry is confined to the lower districts of North Carolina, which furnish almost all the tar and turpentine exported from Wilmington and other

ports. All the tar of the southern states is made from dead wood of the long-leaved pine, consisting of trees prostrated by time or by the fire kindled annually in the forests, of the summits of those which are felled for timber, and of limbs broken off by the ice which sometimes overloads the leaves. It is worthy of remark, that the branches of resinous trees consist almost wholly of wood of which the organization is even more perfect than in the body of the tree; the reverse is observed in trees with deciduous leaves. As soon as vegetation ceases in any part of the tree, its consistence speedily changes, the sap decays, and the heart, already impregnated with resinous juice, becomes surcharged to such a degree as to double its weight in a year; the accumulation is said to be much greater in four or five years. To procure the tar, a kiln is formed in a part of the forest abounding in dead wood; this is first collected, stripped of the sap, and cut into billets two or three feet long, and about three inches thick. The next step is to prepare a place for piling it: for this purpose a circular mound is raised, slightly declining from the circumference to the centre, and surrounded with a shallow ditch. The diameter of the pile is proportioned to the quantity of wood which it is to receive: to obtain 200 barrels of tar, it should be eighteen or twenty feet wide. In the middle is a hole with a conduit leading to the ditch, in which is formed a receptacle for the resin as it flows out. Upon the surface of the mound, beaten hard and coated with clay, the wood is laid in radiations from the centre; and the pile, when finished, may be compared to a cone truncated at two thirds of its height, and reversed, being twenty feet in diameter below, twenty-five or thirty feet above, and ten or twelve feet high. It is then strewed over with pine leaves, covered with earth, and sustained at the sides with a slight cincture of wood. This covering is necessary in order that the fire kindled at the top may penetrate to the bottom with a slow and gradual combustion, because, if the whole mass was rapidly inflamed, the operation would fail, and the labour in part be lost: in a word, nearly the same precautions are required in this process as are observed in Europe in making charcoal. A kiln which is to afford 100 or 130 barrels of tar, is eight or nine days in burning. The tar flows off into the ditch.

The white pine is another valuable species. This tree is diffused, though not uniformly, over a vast extent of country. It is incapable of supporting intense cold, and still less extreme heat. It appears to be most abundant between the forty-third and forty-seventh degrees of latitude; further south it is

found in the valleys and on the declivities of the Alleghanies to their termination, but at a distance from the mountains on either side its growth is forbidden by the warmth of the climate. It is said with great probability to be numerous near the source of the Mississippi, which is in the same latitude with the district of Maine, the upper part of New Hampshire, the state of Vermont, and the commencement of the St. Lawrence, where it attains its greatest dimensions. "I measured two trunks," say Michaux, "felled for canoes, of which one was 154 feet long and 54 inches in diameter, and the other 142 feet long and 44 inches in diameter, at three feet from the ground. Mention is made in Belknap's History of New Hampshire, of a white pine felled near the river Merrimack, seven feet eight inches in diameter, and near Hollowell I saw a stump exceeding six feet: these enormous stocks had probably reached the greatest height attained by the species, which is about 180 feet, and I have been assured by persons worthy of belief, that in a few instances they had felled individual trees of nearly this stature." It is probable that the authors who have stated its height at 260 feet, have been misled by incorrect reports; but this ancient and majestic inhabitant of the North American forests is still the loftiest and most valuable of their productions, and its summit is seen at an immense distance aspiring towards heaven, far above the heads of the surrounding trees. The trunk is simple for two thirds or three fourths of its height, and the limbs are short and verticillate, or disposed in stages one above another to the top of the tree, which is formed by three or four upright branches, seemingly detached and unsupported. In forests composed of the sugar maple, the beeches, or the oaks, where the soil is strong and proper for the culture of corn, as for example on the shores of Lake Champlain, the white pine is arrested at a lower height and diffused into a spacious summit; but it is still taller and more vigorous than the neighbouring trees. The wood of this species is employed in greater quantities and for far more diversified uses than that of any other American pine; yet it is not without essential defects: it has little strength, gives a feeble hold to nails, and sometimes swells by the humidity of the atmosphere. These properties are compensated, however, by others which give it a decided superiority: it is soft, light, free from knots, and easily wrought; it is more durable, and less liable to split when exposed to the sun; it furnishes boards of a great width, and timber of large dimensions; in fine, it is still abundant and cheap. A very large proportion of the

houses in the United States are built of it. The vast consumption of this tree for domestic use, and for exportation to the West Indies and to Europe, renders it necessary every year to penetrate further into the country; and inroads are already made, in quest of this species only, upon forests which probably will not be cleared for cultivation in twenty-five or thirty years.

Of the several species of spruce, the two most considerable are the black spruce and the hemlock. They both appertain to the coldest regions of the new world. The regions in which the black spruce is the most abundant are often diversified with hills, and the finest forests are found in valleys where the soil is black, humid, deep, and covered with a thick bed of moss. Though crowded so as to leave an interval of only three, four, or five feet, these stocks attain their fullest development, which is seventy or eighty feet in height and from fifteen to twenty inches in diameter. The summit is a regular pyramid, and has a beautiful appearance on insulated trees; this agreeable form is owing to the spreading of the branches in a horizontal instead of a declining direction, like those of the true Norway pine, which is a more gloomy tree. The timber of the black spruce is distinguished by strength, lightness, and elasticity. Josselyn, in his *History of New England*, published in London, in 1672, informs us, that it was considered at that period as furnishing the best yards and topmasts in the world. From the young branches of the tree, by boiling, is made the salutary liquor called spruce beer. The hemlock spruce abounds in the district of Maine, the state of Vermont, and the upper part of New Hampshire, where it forms three quarters of the evergreen woods, of which the remainder consists of the black spruce. Further south it is less common, and in the middle and southern states is seen only on the Alleghanies, where it is often confined to the sides of torrents, and to the most humid and gloomy situations. In the country east and north of Massachusetts, which, without embracing Canada, is more than 750 miles long and 250 miles broad, the resinous trees are constantly found at the foot of the hills, and constitute nearly half of the unbroken forests which cover these regions. The hemlock spruce is always larger and taller than the black spruce. It attains the height of seventy or eighty feet, with a circumference of from six to nine feet, which is uniform for two thirds of its length; but if the number and distance of the concentric circles afford a certain criterion of the longevity of trees and the rapidity of their vegetation, it must be nearly two centuries in acquiring these di-

mensions. In a favourable soil this tree has an elegant appearance while less than thirty feet high, owing to the symmetrical arrangement of its branches, and to its tufted foliage; and at this age it is employed in landscape gardening. When arrived at its full growth, the large limbs are usually broken off four or five feet from the trunk, and the dried extremities are seen staring out through the little twigs which spring around them; in this mutilated state, by which it is easily recognised, it has a disagreeable aspect, and presents, while in full vigour, an image of decrepitude. This accident, which is attributed to the snow lodging upon the close, horizontal, tufted branches, never happens to the young trees, whose fibres are more flexible. The woods are also filled with dead stocks; but it is uncertain whether their destruction is occasioned by an insect which attaches itself of preference to the pines, or to some other cause. The dead moss-grown trees, which stand mouldering for twenty or thirty years, deform the forests of this part of the United States, and give them a gloomy and desolate appearance. Unhappily the properties of its wood are such as to give this species only a secondary importance, notwithstanding its abundant diffusion: it is the least valuable in this respect of all the large resinous trees of North America; but the regret which we should experience to see it occupying so extensively the place of more useful species, is forbidden by a property of its bark, inestimable to the country where it grows, that of being applicable in tanning.

Two species of cypress are indigenous to the United States. The banks of Indian river, a small stream that waters a part of Delaware, in latitude $38^{\circ} 50'$, may be assumed as its northern boundary. Hence, in proceeding southward, it becomes constantly more abundant in the swamps; but in Maryland and Virginia it is confined to the vicinity of the sea, where the winter is milder and the summer more intense. Beyond Norfolk its limits coincide exactly with those of the pine-barrens, and in the Carolinas and Georgia it occupies a great part of the swamps which border the rivers, after they have found their way out from among the mountains, and have entered the low lands. In the Mississippi valley it begins to be seen on the swampy and overflowed lands, near the mouth of the Ohio. It is, along with the swamp gum, the most common tree in the deep swamps from that point to the gulf of Mexico. It is in every respect a striking and singular tree. Under its deep shade arise a hundred curiously shaped knobs, called "cypress knees." They are regular, cone-shaped protuberances, of different heights and cir-

cumferences, not unlike tall and taper circular beehives. "We have often remarked," says Mr. Flint, "a very small cypress sprig, that had started from the apex of one of these cypress knees; and we believe, that it will ultimately be found that each one of these knees is the natural matrix of the tree." These noble trees rear their straight columns from a large, cone-shaped buttress, whose circumference at the ground is, perhaps, three times that of the regular shaft of the tree. This cone rises from six to ten feet, with a regular and sharp taper, and from the apex of the cone towers the perpendicular column, with little taper after it has left the cone, from 60 to 80 feet clear shaft. The largest stocks are 120 feet in height, and from 25 to 40 feet in circumference above the conical base. Very near its top it begins to throw out multitudes of horizontal branches, which interlace with those of the adjoining trees, and, when bare of leaves, have an air of desolation and death more easily felt than described. In the season of vegetation, the leaves are short, fine, and of a verdure so deep as almost to seem brown, giving an indescribable air of funereal solemnity to this singular tree. A cypress forest, when viewed from the adjacent hills, with its numberless interlaced arms covered with this dark brown foliage, has the aspect of a scaffolding of verdure in the air. It grows in deep and sickly swamps, the haunts of fever, mosquitoes, moccasin snakes, alligators, and all loathsome and ferocious animals, that congregate far from the abodes of man, and seem to make common cause with nature against him. The cypress loves the deepest, most gloomy, inaccessible, and inundated swamps; and, south of 33 degrees, is generally found covered with the sable festoons of the long moss, hanging, like a shroud of mourning wreaths, almost to the ground. It seems to flourish best where water covers its roots for half the year. When it rises from eight or ten feet water of the overflow of rivers, the apex of its buttress is just on a level with the surface of the water, and it is then, in many places, that they cut it. The negroes surround the tree in boats, and thus get at the trunk above the huge and hard buttress, and fell it with comparative ease. They cut off the straight shaft, as it suits their purpose, and float it to a raft, or the nearest high grounds. Unpromising as are the places and the circumstances of its growth, no tree of the country where it is found is so extensively useful. It is free from knots, is easily wrought, and makes excellent planks, shingles, and timber of all sorts. It is very durable, and incomparably the most valuable tree in the southern country. It is a fortunate circumstance, that it inhabits the most

gloomy and inaccessible regions, which will not come into cultivation for ages, so that it will of course, have a better chance of escaping the fate of the most useful timber on the valuable uplands. The improvident axe soon renders timber difficult to be procured, even in a country in the centre of forests. All the cypress forests that are easily accessible, on the lower Mississippi and its tributaries, have already been stripped of their timber by the lumberers, who have floated to New Orleans millions of feet of this timber from the lands of the United States, and who have already created a scarcity of this species on the margin of the river; there are, however, in the vast swamps of the Mississippi, Arkansas, Red river, and Florida, inexhaustible supplies of cypress still remaining.

In addition to these we may notice the acacia and the poplar. Several varieties of the acacia, or locust tree, are found in the United States, from whence this valuable tree was early imported into Europe. It is most multiplied in the south-west, and abounds in all the valleys between the chains of the Allegany mountains, particularly in Limestone valley. It is also common in all the western states, and in the territory comprised between the Ohio, the Illinois, the lakes, and the Mississippi. It is not found in the states east of the river Delaware, nor does it grow spontaneously in the maritime parts of the middle and southern states, to the distance of from fifty to one hundred miles from the sea; all the stocks that are seen in these parts having been planted at different periods. Though the locust is multiplied east of the mountains in the upper part of Virginia and of the two Carolinas, it forms a much smaller proportion of the forests than the oaks and walnuts; and it is nowhere found occupying exclusively tracts even of a few acres. For this reason it is the only tree, besides the black walnut, that is left standing in the clearing of new lands; hence these two species, which are not sufficiently multiplied to supply the demand for their wood, are frequently seen growing in the midst of cultivated fields. The greatest consumption of locust wood is for posts, which are employed by preference for the enclosing of court-yards, gardens, and farms, in the districts where the tree abounds, and in the circumjacent country. In naval architecture, the shipwrights use as much of it as they can procure. It combines great durability with strength and lightness. The sweet locust belongs peculiarly to the country west of the Allegany mountains, and it is found scarcely in any part of the Atlantic states, except in Limestone valley, and its branches, which lie between the first and second ranges of the Alleganies.

Of the poplar, several species exist in the United States. Of this family is the tulip tree, or yellow poplar, a splendid, lofty, and useful tree. The cotton wood belongs to the same genus. It is probably more abundant on the lower courses of the Ohio, on the whole course of the Mississippi, Missouri, St. Francis, White river, Arkansas, and Red river, than any other tree. It is a noble and lofty forest tree, and sometimes vies with the sycamore itself for predominance in size and grandeur. It is of singular beauty when its foliage is but partly unfolded in the spring. These trees, especially in the valley of Red river, have been seen twelve feet in diameter; and there are single trees, that will make a thousand rails. When they are cut in the winter, the moment the axe penetrates the centre of the tree, there gushes out a stream of water or sap, and a single tree will discharge gallons. On the sand bars and islands of the rivers, wherever the alluvial earth begins to be deposited, there springs up a growth of cotton wood, the young trees standing so thick as to render it difficult for a bird to fly among them, and having, to a person passing at a little distance on the river, a singular appearance of regularity, as though they had been put out to ornament a pleasure-ground. The popular name "cotton wood" is derived from the circumstance, that soon after its foliage is unfolded, it flowers, and when the flowers fall, it scatters on the ground a downy matter, in feeling and appearance exactly resembling short ginned cotton.

Among the ornamental trees of the American forest we have been led to assign the magnolias a conspicuous place. It is undoubtedly a beautiful tree; but seems to have been so extravagantly described by American writers, as to occasion disappointment when first beheld by a stranger in its native localities. There are six or seven varieties among the laurels of the magnolia tribe, some of which have smaller flowers than those of the grandiflora, but much more delicate, and more agreeably fragrant. A beautiful evergreen of this class is covered in autumn with berries of an intense blackness, and has been remarked in great numbers about St. Francisville. The holly is a well-known and beautiful tree of this class; but the handsomest of the family is the laurel almond. It is not a large tree. Its leaves strongly resemble those of the peach; it preserves a most pleasing green through the winter, and its flowers yield a delicious perfume. It grows in families of ten or fifteen trees in a cluster; and planters of taste in the valley of Red river, where it is common, often select the place of their dwelling in the midst of them.

The catalpa, or catawba, is an ornamental tree, abounding in West Florida and the southern part of the Mississippi valley. It is beautiful from the great size, peculiar shape, and deep green of its foliage. When in blossom, its rounded top is a tuft of flowers, of great beauty and unequalled fragrance. One tree in full flower fills the atmosphere, for a considerable circumference round it, with its delicious odours. For the gracefulness of its form, for the grandeur of its foliage, and the rich and ambrosial fragrance of its flowers, as well as for the length and various forms of its knife-shaped, pendent seed capsules, two feet in length, it is considered by some writers unequalled among ornamental trees.

The bow-wood is a striking and beautiful tree, found on the upper courses of the Washita, the middle regions of Arkansas, and occasionally on the northern limits of Louisiana. It inhabits a very limited region, and is supposed not to be native elsewhere. Taken altogether, it is a tree of extraordinary beauty. It bears a large fruit of most inviting appearance, and resembling a very large orange; but tempting as it is in aspect, it is the apple of Sodom to the taste. Many people consider it the most splendid of all forest trees. It receives its name from the circumstance, that all the south-western savages use it for bows. The china tree is much cultivated in the southern regions of the Mississippi valley for ornamental shade. The verdure is the most brilliant and deep in nature. In the flowering season, the top is one tuft of blossoms, in colour and fragrance resembling the lilac, except that the tufts are larger, and it holds in flower for a long time. These trees, planted out in a village, in a few years completely embower it; and, from the intenseness of their verdure, they impart a delightful freshness to the landscape in that sultry climate. After the leaves have fallen in autumn, the tree is still covered with a profusion of reddish berries, of the size of haws, that give it the appearance at a little distance of remaining in flower. Robins migrate to this region in the latter part of winter, settle on these trees in great numbers, and feed on the berries, which possess an intoxicating or narcotic quality, so that the robins, sitting on the trees in a state of stupefaction, may be killed with a stick. The dog-wood and the red-bud are of an intermediate size, between shrubs and trees. The former has a beautiful heart-shaped and crimped leaf, and an umbrella-shaped top. It covers itself in spring with a profusion of brilliant white flowers, and in autumn with berries of a fine scarlet. The red-bud is the first shrub that is seen in blossom on the Ohio. The shrub is

then a complete surface of blossoms resembling those of the peach tree, and a stranger would take it, at that time, to be that tree. The shrubs are dispersed everywhere in the woods; and in descending the Ohio early in the spring, these masses of brilliant flowers contrast delightfully with the general brown of the forest: the first time that the voyager descends this river, the red-bud imparts a charm to the landscape that he will never forget. These two are at once the most common and the most beautiful shrubs in the Mississippi valley. The dog-wood, especially, is found everywhere from Pittsburgh to the gulf of Mexico; and, seen through the forests, in blossom, is far more conspicuous for its flowers than the magnolia. The rhododendron, or dwarf rose bay, and the kalmia, or mountain laurel, are plants with which our own shrubberies have now rendered us familiar. The west end of Long Island, and the river Hudson below the Highlands, may be considered as the limit far beyond which the rhododendron ceases to be found in the forests of the United States. It is abundant in the middle states, and in the upper parts, particularly in the mountainous tracts of the southern section. In the low lands it is almost exclusively seen on the borders of creeks and rivers, and is observed to be more multiplied in approaching the Alleghanies; till, in the midst of these ranges, especially in Virginia, it becomes so abundant on the side of the torrents as to form impenetrable thickets, in which the bear finds a secure retreat from the pursuit of the dogs and of the hunters.

The kalmia abounds in New Jersey, and covers Wheelock Hill, nearly opposite to the city of New York. It grows also near the Schuylkill, in the immediate neighbourhood of Philadelphia. It is found along the steep banks of all the rivers which rise in the Alleghany mountains; but it is observed to become less common in following these streams from their source, towards the Ohio and Mississippi on one side, and towards the ocean on the other. In the southern states it disappears entirely when the rivers enter the low country, where the pine-barrens commence. In North Carolina, on the loftiest part of the Alleghanies, it occupies tracts of more than 100 acres, and forms upon the summit, and for a third of the distance down the sides, thickets eighteen or twenty feet in height, which are rendered nearly impenetrable by the crooked and unyielding trunks, crossed and locked with each other. As the shrubs which compose these copses are of a uniform height, and richly laden with evergreen foliage, they present, at a distance, the appearance of verdant meadows surrounded by tall trees. The snowberry

is an ornamental shrub, inhabiting the banks of the upper Missouri. It bears at the same time flowers and fruit, which continue successively expanding and ripening during the whole summer; and when in the autumn the large bunches of ivory or wax-like berries are matured, the appearance is stated to be extremely beautiful. Of the gaudy genus *erythrina*, or coral tree, the United States lay claim to one species. It is an herbaceous shrub from two to three feet high. It is a native of the open bushy forests of Carolina, Georgia, and Florida; and its brilliant red blossom makes a superb appearance at the time of florescence.

The southern regions of the United States, as far north as Cape Hatteras, present to us one species of palm. It is the palmetto, or cabbage tree. A trunk from forty to fifty feet in height, of a uniform diameter, and crowned with a regular and tufted summit, gives the cabbage tree a beautiful and majestic appearance. The base of the undisclosed bundle of leaves is white, compact, and tender; it is eaten with oil and vinegar, and resembles the artichoke and the cabbage in taste, whence is derived the name of cabbage tree: but to destroy a vegetable which has been a century in growing, to obtain three or four ounces of a substance neither richly nutritious nor peculiarly agreeable to the palate, seems to be nothing short of prodigality. The cabbage tree bears long clusters of small greenish flowers, which are succeeded by a black inesculent fruit, about the size of a pea. In the southern states the wood of this tree, though extremely porous, is preferred to every other for wharves: its superiority consists in being secure from injury by sea-worms, which, during the summer, commit great ravages in structures accessible to their attacks; but when exposed to be alternately wet and dry by the flowing and ebbing of the tide, it decays as speedily as other wood. The use of the cabbage tree is rapidly diminishing its numbers, and probably the period is not distant when it will cease to exist within the boundaries of the United States. In the war of independence, the cabbage tree was found eminently proper for constructing forts, as, on the passage of the ball, it closes without splitting.

Among wild fruit-bearing shrubs, the pre-eminence seems to be due to the papaw, or Indian fig. It is not uncommon in the bottoms which stretch along the rivers of the middle states; but it is most abundant in the rich valleys intersected by the western waters, where, at intervals, it forms thickets exclusively occupying several acres. In Kentucky, and in the western part of Tennessee, it is sometimes seen also in forests where the soil is luxuriantly fer-

tile, of which its presence is an infallible proof; in these forests it attains the height of thirty feet, and the diameter of six or eight inches, though it generally stops short of half this elevation. The fruit closely resembles a cucumber, having, however, a more smooth and regular appearance; when ripe, it is of a rich yellow, and there are generally from two to five in a cluster. The pulp resembles egg-custard in consistence and appearance; it has the same creamy feeling in the mouth, and unites the taste of eggs, cream, sugar, and spice: in short, it is a natural custard, and is too luscious for the relish of most people. The fruit is nutritious, and a great resource to the savages. So many tastes are unexpectedly and whimsically compounded in it, that, it is said, a person of the most hypochondriac temperament relaxes to a smile when he tastes papaw for the first time.

Three species of cherry are found in the United States, one of which occurs both in the Atlantic and the western states, as a tall timber tree. None of them produce eatable fruit; but the red cherry bears the greatest analogy to the cultivated cherry of Europe, and is the most likely to allow of grafting.

The persimon varies surprisingly in size in different soils and climates. In the vicinity of New York it is not more than half as large as in the more southern states, where, in favourable situations, it is sometimes sixty feet in height, and eighteen or twenty inches in diameter. The ripe fruit is about as large as the thumb, of a reddish complexion, round, fleshy, and furnished with six or eight semi-oval stones; but it is not eatable till it has felt the first frost, by which the skin is shrivelled, and the pulp, which before was hard and extremely harsh to the taste, is softened and rendered palatable. The fruit is so abundant, that in the southern states a tree often yields several bushels; and even in New Jersey are seen the branches of stocks, not more than seven or eight feet in height, bent to the ground by their burden. In the south the fruit adheres to the branches long after the shedding of the leaf; and when it falls, it is eagerly devoured by wild and domestic animals. In Virginia, the Carolinas, and the western states, it is sometimes gathered up, pounded with bran, and formed into cakes, which are dried in the oven, and kept in order to make beer; for which purpose they are dissolved in warm water, with the addition of hops and leaven. It was long since found that brandy might be made from this fruit, by distilling the water, previously fermented, in which they had been bruised. This liquor is said to become good as it acquires age but it will be impossible to de-

rive profit from the persimon in these modes, and in the country where it is most abundant a few farmers only employ its fruit occasionally for their households. The apple and the peach tree are far more advantageous, as their growth is more rapid and their produce more considerable.

The Chickasaw plum is common from 34° north latitude to the gulf of Mexico. It is found in the greatest abundance, and ripens early in June. Prairie plums are most abundant in Illinois and Missouri on the hazel prairies. They are of various sizes and flavours; their general colour is reddish and their flavour tart, but some of them are large and delicious. In some places they are found in inconceivable quantities, the surface of acres being red with them; and two bushels have been gathered from one tree. The yellow Osage plum of this class, when the better kinds are cultivated, is delicious. In the middle regions of the central valley, on prairies of a particular description, there are great tracts covered with an impenetrable mat of crab apple shrubs. The form colour, and fragrance of the blossoms, are precisely those of the cultivated apple tree, and when the southern breeze comes over a large tract of these shrubs in full blossom, it is charged with a concentrated fragrance almost too strong to be grateful. They are useful as stocks in which the cultivated apple and pear tree may be engrafted. Their fruit, when properly prepared, makes fine cider, and the apple is much used as a preserve. The mulberry is of rare occurrence in the Atlantic states, but is found in every part of the valley of the Mississippi, and in some places constitutes no inconsiderable portion of the timber. Its wood is very valuable, and scarcely less durable than that of the locust. The American species is not the black mulberry of Europe, but the red mulberry. The white mulberry, on which the silkworm feeds, has been asserted to be indigenous to the United States; but the stocks of this kind which may now be seen there, are stated by Michaux to have been planted "a century ago, when attempts were made to introduce the raising of silkworms;" as the soil and climate of the United States, however, are well adapted to the white mulberry, there is no reason why that branch of industry should not be cultivated successfully, though the experiments hitherto made have had no very promising result.

The common grape vine is diffused through all the climates. Nothing is more common than, in the richer lands, to see vines, often of a prodigious size, perpendicularly attached at the top to branches sixty or eighty feet from the ground, and at a great lateral distance from the trunk of the tree. It is common

to puzzle a man first brought into these woods, by putting him to account for the manner in which a vine, perhaps nearly of the size of the human body, has been able to rear itself to such a height: there can be, however, no doubt that the vine in this case is coeval with the tree; that the tree, as it grew, reared the vine; and that the vine receded from the trunk with the projection of the lateral branch, until, in the lapse of time, this singular appearance is presented. In many places, half the trees in a bottom are covered with these vines. In the deep forests, on the hills, in the barrens, in the hazel prairies, and in the pine woods, every form and size of the grape vine presents itself. Of the plants of the winter grape, which so generally clings to the trees in the alluvial forests, probably not one in fifty bears any fruit at all. The fruit, when produced, is a small circular berry, not unlike the wild black cherry. It is austere, sour, and unpleasant, until it has been mellowed by the frosts of winter; but it is said, when fermented by those who have experience in the practice, to make a tolerable wine. The summer grape is found on the rolling barrens and the hazel prairies. It is more than twice the size of the winter grape, is ripe in the first month in autumn, and, when matured under the full influence of the sun, is a pleasant fruit. It grows in the greatest abundance, but is too dry a grape to be pressed for wine. The muscadine grape is seldom seen north of 34 degrees. More southerly it becomes abundant, and is found in the deep alluvial forests, clinging to the tall trees. The fruit grows in more scanty clusters than that of other grapes. Like other fruits, they fall as they ripen, and furnish a rich treat to bears and other animals that feed on them; they are of the size of a plum, of a fine purple black, with a thick tough skin, tasting not unlike the rind of an orange; the pulp is deliciously sweet, but is reputed unwholesome. The pine woods grape has a slender, bluish purple vine, that runs on the ground among the grass. It ripens in the month of June; is large, cone-shaped, transparent, with four seeds, reddish purple, and is a fine fruit for eating. On the sandy plains at the sources of Arkansas and Red river, the gentlemen of Long's expedition concur with hunters and travellers in relating, that there are found large tracts of sandy plain, from which grows a grape, probably of this species. They have stated that the clusters are large and delicious, and that the sand, drifting about them, covers up the redundant vegetation, performing the operation of pruning on the vine: the sun, too, strongly reflected from a surface of sand, must have a powerful influence to mature the fruit. It is possible,

that some part of the admiration which has been felt, in seeing such sterile tracts covered with these abundant and rich clusters, and the high zest with which they were devoured, may have been owing to the surprise of finding such a phenomenon in contrast with a white and moving sand, and eating the fruit under associations created by hunger and thirst. The universal diffusion of such numbers and varieties of the vine, would seem to indicate this valley to possess a natural aptitude for the cultivation of the vine.

The gooseberry, in all its natural varieties, is indigenous to the United States. In the middle regions of the Mississippi valley it grows to a great height and size, and covers itself with fruit. It makes a high, compact, and impervious hedge. Immense tracts of the prairies are covered with the hazel, and the nuts are fine and abundant; the bushes are often surmounted with wreaths of the common hop. The whortleberry abounds in the Atlantic states, but is less common in the interior. The red raspberry is also indigenous, and grows of a fine size and flavour from the middle to the northern regions of the great valley: one species of it, the rose-flowering raspberry, has a large and ornamental blossom. Blackberries, high and creeping, are found in prodigious abundance, and the prairies in many places, in the season, are red with fine strawberries. The cranberry is a native fruit of the North American continent. It grows in morasses and swamps of rich boggy bottoms, from Labrador to Carolina. When found it is in great abundance, and gives to such localities the name of cranberry swamps. Extensive cranberry swamps are met with in New Jersey.

The cane grows on the lower courses of the Mississippi, Arkansas, and Red river, from fifteen to thirty feet in height; some, in these rich soils, would almost vie in size with the bamboo. The leaves are of a beautiful green, long, narrow, and dagger-shaped, not unlike those of the Egyptian millet. It grows in equidistant joints, perfectly straight, and in almost a compact mass, so that the smallest sparrow would find it difficult to fly among it. Looking at its ten thousand stems almost contiguous to each other, and at the impervious roof of verdure which it forms at its top, it has the aspect of a solid layer of vegetation. A man could not advance at the rate of three miles in a day through a thick cane-brake. It is the chosen resort of bears and panthers, (cougars,) which break it down, and make their way into it as a retreat from man. It indicates a dry soil, above the inundation, and of the richest character; and the ground is never in better preparation for maize, than after this prodigious mass of vegetation

is first cut down and burned. When the cane has been cut, and is so dried that it will burn, it is an amusement of high holiday to the negroes to set fire to it. The rarefied air in the hollow compartments of the canes bursts them, with a report not much inferior to a discharge of musketry; and the burning of the whole brake makes the noise of a conflicting army, in which thousands of muskets are continually discharging. This beautiful vegetable is generally asserted to have a life of five years, at the end of which period, if it has grown undisturbed, it produces an abundant crop of seed, with heads very like those of the broom corn; the seeds are farinaceous, and are said to be not much inferior to wheat, for which the Indians, and occasionally the first settlers, have substituted it. No prospect so strikingly shows the exuberant prodigality of nature, as a thick cane-brake; nothing affords such a rich and perennial range for cattle, sheep, and horses; and the butter that is made from the cane pastures of this region is of the finest kind. The seed easily vegetates in any rich soil. It rises from the ground like the richest asparagus, with a large succulent stem, and it grows six feet high before it loses its succulency and tenderness. No vegetable furnishes a fodder so rich or abundant; and it has been recommended to make trial of the annual cultivation of the cane in regions where it can not survive the winter. A species of flax was found by Lewis and Clark growing in the valleys of the Chippewyan Mountains, and on the banks of the Missouri. The bark possesses the same kind of tough fibres as the common flax, and the Indians are in the habit of making lint and wadding for their guns from it.

Many parts of the United States are tangled with annual and perennial creepers of various kinds, foliage, and forms. The trumpet flower (*bignonia*) is a creeper, beautiful for its foliage and flowers. It has a vine of a grayish white colour, and long and delicate spike-shaped leaves in alternate sets. It climbs the largest trees in preference to others, mounts to their summits, and displays a profusion of large, trumpet-shaped flowers, of a flame colour. Planted near a house, in two or three seasons a single vine will cover a roof, throwing its fibrous and parasitic roots so strongly under the shingles, as to detach them from the rafters. Various species of ivy abound, especially in the rich alluvions, where thousands of the forest trees, and often huge dead trunks, are wreathed with it. The supplejack is remarkable for attaching itself so strongly to the shrub it entwines, as to cause those curious spiral curves and inner flattenings which give value to its cane.

The gramineous vegetation of the United States is extremely luxuriant, and species of grass are found adapted to every locality, except the sands of the Chippewyan desert. The aspect of the eastern, however, differs in this respect from that of the western states. The northern Atlantic country covers itself naturally with a fine sward, but the friable soil of the western lands is the region of coarse grass, and tall flowering plants with gaudy blossoms. The numbers, forms, and gigantic height of these weeds and plants, are not among the least surprising objects to an observer of nature. We have already noticed the kind of sedge which occupies the salt marshes of the Atlantic coast, and the various changes in it as the uplands are approached. In the boggy meadows of New England, and elsewhere in low, wet, and miry swamps, on parts elevated above the water, grows the swamp grass; it is of the brightest verdure, remaining green through the frosts of winter, and its sharp edges, when drawn rapidly through the fingers, cut them. In the middle regions of the Mississippi valley, cattle are driven to these swamps, to subsist through the winter. The universal indigenous grass of this country, in all its climates and extent, covering the millions of acres of the prairies, is what is commonly called the prairie grass, (*poa pratensis*.) It grows equally in the forests and barrens, wherever there is an interval sufficiently unshaded to admit its growth. It is tall, coarse, and full of seeds at the top; and when ripe, is rather too wiry for fodder. It is cut for that purpose in September. If it were cut earlier, and before it had lost its succulence and tenderness, it would probably be excellent feed. The prairies yield inexhaustible quantities, and the towns and villages in the prairie regions are copiously supplied with it. When young, and before it has thrown up its stem, it resembles wheat in appearance. The speargrass of New England yields a fine, soft sward. In the western country it is observed growing about deserted houses and Indian villages, and it is said in many places to be displacing the prairie grass, on the upper prairies of Illinois; like the robin-redbreast, it seems to be attached to the abodes of civilized man. The fowl meadow grass of New England is also valuable; but it does not abound, if it exists, in the western states, to the wet prairies of which it would be an important acquisition.

A useful herbaceous plant is the rush, (*equisetum hyemale*,) which grows in bottoms, on grounds of an intermediate elevation between those of the cane-brake and the deeply-flooded lands. This grass is sometimes a perfect mat, as high as the shoulders.

Nothing can exceed the brilliance of its verdure, especially when seen in winter in contrast with the universal brown. Where it grows high and thick, it is difficult to make way through it; and it has a disagreeable kind of rustling, which produces the sensation that is called setting the teeth on edge. In the northern regions its tubular stem is apt to fill with compact icicles. It is the favourite range of horses and cattle, and is devoured by them with more greediness than even cane; but if swallowed when filled with ice, it produces a chill in the stomach of the cattle that is apt to prove fatal. To the boats that descend the Mississippi, the rush is an invaluable resource, the cattle and horses, after being pent up in these floating barns for many days in succession, being turned loose, and finding holyday pasture in this rich range. The pea vine is a small fibrous vine, that covers the soil in the richer forest lands; it receives its name from the resemblance of its leaves and flowers to those of the cultivated pea. It is a rich and almost universal forest range for cattle, but when once eaten down, it is not apt to renew itself; of course, it disappears in the vicinity of compact population.

A plant of great importance is the wild rice, (*zizania aquatica*.) It is found in the greatest abundance on the marshy margins of the northern lakes, and in the shallow waters on the upper courses of the Mississippi. It grows in these regions on a vast extent of country. It is here that the millions of the migrating water-fowls fatten, before they take their autumnal migration to the south; it is here, too, that the northern savages, and the Canadian traders and hunters, find their annual supplies of grain, a resource, without which they could hardly subsist. It is a tall, tubular, reedy water-plant, and very much resembles the cane grass of the swamps and marshes on the gulf of Mexico. It springs up from waters of six or seven feet in depth, where the bottom is soft and muddy, and rises nearly as high above the water. Its leaves and spikes, though much larger, resemble those of oats, from which the French give it its name. When it is intended to be preserved for grain, the spikes are bound together, to secure them from the ravages of birds and water-fowls, which prey upon them in immense numbers, and it thus has a chance to ripen; at the season for gathering it, canoes are rowed among the grain, a blanket is spread upon them, and the grain is beaten on to the blankets. It is perhaps of all the *cereal*ia, except maize, the most prolific. It seems also not peculiar to any climate, since it arrives at perfection equally at the sources and at the mouths of the Mississippi.

A perennial plant of the palm kind, and called also palmetto, appears about latitude 33°. It throws up from a large root, so tough as to be cut with difficulty by an axe, and very hard to be eradicated from the soil, large fan-shaped leaves, of the most striking and vivid verdure, and ribbed with wonderful exactness. It indicates a deep swampy soil, and grows to six feet in height. The infallible index of swamp and of southern climate, and having no resemblance to any plant seen at the north, its foreign aspect, and its deep green, unchanged by winter, when first seen by the traveller from the north, is apt to produce considerable surprise, and strongly reminds him that he is a stranger, and in a new climate. It is used by the savages and the poorer creoles as thatch for their cabins; and from the tender shoots of the season, properly prepared, a very useful kind of summer hats, called palmetto hats, is manufactured. The May apple is a beautiful plant that completely covers the ground, where it grows, with the freshest and most cheering verdure of spring. It has a handsome white blossom, and bears a fruit of the appearance and taste of a lemon, and its root is a powerful cathartic. Strammony is a poisonous weed, perniciously common through the western country. On the richest bottoms it grows fifteen feet in height, and of such a size and compactness, as to prevent cattle from running among it. It has splendid flowers, and a great quantity of oily seeds; its smell is nauseous, and it is a common and annoying tenant of the villages on the alluvial margin of rivers: in some places, no inconsiderable part of the labour on the highways is to cut up this weed from the roads and outlets of the villages. Its popular name is jimson, probably a corruption of Jamestown, the place whence it was said to have been brought. It is used as medicine in spasmodic asthma. The next most common and annoying weed along the roads, especially in Louisiana, is a very tall plant resembling *cassia marilandica*; it renders the paths, and the banks of the streams, in that region, almost impassable in autumn, until the cattle have trodden it down. Cockle burrs in the same situations are excessively annoying weeds, filling the outlets and uncultivated places to such a degree, that the burrs adhere to the clothes of passengers, and mat the wool of sheep running among it with an inextricable tangle. The common nettle is everywhere annoying to the summer traveller in the woods. One of the most singular of the forest productions is the wax plant, every part of which, except the root and the anthers, is snow white, and has the appearance of the most delicate wax preparation. It grows in rich shady woods, and is

greatly prized because of its delicate appearance. The beautiful blue flower with golden anthers, the Virginian spiderwort, now common in our gardens, is a native of the sandy margins of rivers and creeks in the United States. It is disputed whether tobacco, long naturalized and now extensively cultivated in North America, is indigenous to the country or not.

The common kinds of aquatic plants are found in the still and shallow waters of the swamps; particularly a beautiful kind of water lily, highly fragrant, but not identical with the New England pond lily. This is the *nymphaea odorata*, closely resembling the European water lily. Another of this genus, *nymphaea nelumbo*, is much larger, and, for size and beauty, is said to be unrivalled. Dr. Barton,* who calls it *cyamus luteus*, considers it to be the same as the sacred bean of India, and mentions it as abundant near Philadelphia, but rare otherwise, and refusing propagation. Mr. Flint found it in the southern states, and speaks of it as attaining great splendour on the lakes and stagnant waters of the Arkansas. It rises from a root resembling the large stump of a cabbage, and from depths in the water of from two or three to ten feet; it has an elliptical, smooth, and verdant leaf, some of the largest of them being of the size of a parasol. The muddy creeks and stagnant waters are often so covered with these leaves, that the sandpiper walks on the surface of them without dipping her feet in the water. They have their home in still lakes, in the centre of cypress swamps; mosquitoes swarm above; obscene fowls wheel their flight over them; alligators swim among their roots, and moccasin snakes bask on their leaves: in such lonely and repulsive situations, under such circumstances, and for such spectators, is arrayed, what is represented as the most brilliant display of flowers in the creation. In the capsule are imbedded from four to six acorn-shaped seeds, which the Indians roast and eat when green; or they are dried and eaten as nuts, or reduced to meal, and made into a kind of bread. A singular kind of aquatic vegetation, which has given rise to the fiction of floating islands of vegetation on the waters, is seen to cover a great extent of shallow lakes and muddy streams. It appears, indeed, to float on the water, and great masses of it, no doubt, often are detached and floating, as though there were no roots affixed to the soil at the bottom; but its twiny stem, of many yards in length, is ordinarily bound to the bottom by a thousand fibrous roots. It has a small beautiful elliptical leaf, and a diminutive but delicate white flower.

Under them fishes dart, alligators gambol, and in the proper season, multitudes of water-fowl are seen patting their bills among these leaves. This plant has been designated by the name *pistia stratiotes*. One species of the *orontium*, or golden club, is indigenous to the United States. It grows on the marshy borders of rivers and creeks, or on the margins of ditches and ponds, so far as the tide penetrates, but no further. The only other known species of this plant is a native of Japan.

Besides the mistletoe, which is abundant, a singular parasitic plant of the southern states, is the long moss. It hangs down in festoons, like the stems of the weeping willow. It attaches itself of choice to the cypress, and gives its next preference to the acacia. Its pendent wreaths often conceal the body of the tree to such an extent, that, when bare of foliage, little is seen but a mass of moss. These wreaths, waving in the wind, attach themselves to the branches of other trees, and thus sometimes form curtains of moss which darken the leafless forest of winter. It is in colour of a darkish gray, and the wreaths are many yards in length. It has a small trumpet-shaped flower, of peach-blossom colour, and seeds still finer than those of tobacco. Associated as it naturally is with marshy and low alluvions, where it grows in the greatest profusion, and with the idea of sickness, this dark drapery of the forest has an aspect of inexpressible gloom. When fresh, it is a tolerable fodder for horses and cattle, and the deer feed upon it in winter. It soon dies on dead trees. Prepared something after the manner of water-rotted hemp, the bark is decomposed and the fibre remains, fine, black, strong, elastic, and apparently incorruptible; in this state, in appearance and elasticity it resembles horse hair, and like that, is used for mattresses. Most of the people in the lower country sleep on these mattresses, and they are becoming an article of commerce in the upper country. The creoles make various articles of harness, as horse-collars, and saddle-stuffing, of this material; for which purposes also, considerable quantities are exported to the upholsterers and carriage-makers in the Atlantic country.

Of course it will be understood that in this chapter we have noticed only the more conspicuous and considerable of the vegetable productions of the United States. A mere catalogue of the whole would occupy all the space we can allot to the subject, and would afford our readers neither gratification nor instruction. Scientific works may be referred to for more extended information.

The notice which this chapter contains of the vegetable products of the American states, is lamenta-

* Barton's Flora of North America.

bly brief; but the editor does not feel himself justified in attempting to enlarge it, inasmuch as various works on the subject are abundantly scattered throughout the union. In the correspondence of Sir James Edward Smith, the president of the Linnæan Society of London, there is a letter of some considerable importance, on a species of indigenous *wild wheat*, which it would appear abounds in the western country. This letter is from the late governor of New York, De Witt Clinton, and is addressed to Sir James: it bears date, Utica, July 18, 1817. The scarcity of the work in which it is to be found, and the valuable facts which, in an agricultural point of view, it records, will justify its insertion in this place.

"A few days ago," says Governor Clinton, "a farmer stopped with his wagon at a house in the village of Rome, about fifteen miles from this place. A respectable gentleman, who was conversing with him on business, observing among some hay, lying in the wagon, a few stalks of a strange plant, inquired what they were; and on being told that they were wild wheat, and were cut with common grass in a beaver meadow and on a wet soil in the town of Western in this county, he took out a few grains, and gave them to an honest and industrious farmer in his vicinity, who planted them in his garden. The second crop produced about a peck of grain, which yielded upwards of twenty bushels the third year. Wheat of the same species has also been found in a wild state in a swamp covered with trees near Rome. It is said to differ from the common wheat in a variety of respects,—in the compactness of the stalk, in the largeness of its leaves, in the peculiar position of beards at the apex of the head, which is in all other respects bald, and in its superior height, being considerably taller. Since the comparative scarcity of snow, which formerly served as a protection against the attacks of frost, our wheat has suffered severely by what the farmers denominate winter-killing. Our ground freezes during the winter about a foot and a half in depth. When the sun resumes its vernal power, a partial thaw of two inches takes place in the course of the day; and owing to the porosity and hollowness of the common wheat, the water is absorbed in it. On the return of night, the ground is again frozen, and then the expansive power of frost produces the destruction of the plant, by eradicating it, or breaking the roots to pieces, and bursting the stalk where the water has penetrated. Rye is not affected in this way, because it is not so permeable by water, and because its roots are stronger, more elastic, and strike deeper into the earth. In like manner the wild wheat

of Oneida county is said to resist the power of frost, and this is imputed to the same causes which protect the rye.

"As I am persuaded that the history which I have given of this wheat is substantially correct, it presents a very interesting subject for investigation. Is it indigenous, or was it originally imported wheat, and accidentally conveyed to the places where it was found? If the former, it is the very grain which nature created for our soil and climate. If the latter, it has been evidently improved by its wild state and spontaneous growth;—a circumstance of an anomalous character, and contrary to the usual course of nature.

"Although I am not prepared to give a decided opinion on this subject, yet I may be permitted to observe, that there are cogent arguments against the latter hypothesis.

"The plant was found in a swamp and in a meadow, and appears to delight in a wet soil, which is not congenial with the common wheat. It presents not only a different aspect, but seems to have peculiar and characteristic qualities.

"Linnæus, if I remember rightly, made six species of *Triticum*. Sixteen species are now enumerated, besides varieties; and these are found in the most diversified climates: the Murwaary Wheat of Barbary; the Spring Wheat of Siberia; the Spelter of Germany; the Wheat of Egypt, of Switzerland, of Poland, and of Sicily, cannot be derived from the same country. Ceres, who, according to the heathen mythology, discovered corn, was said to have had her principal seat in Sicily; but this granary of the ancient world has no exclusive claims to the most important of the *Cerealia*. The *Froment tremais*, which arrives at maturity in these marshes, is as different from the other kinds of *Triticum*, as it is possible for different species to be; and it unquestionably could not have had an identity of local origin with them.

"I have been a long time of opinion, that many of our native plants have been improperly considered as naturalized; and as I am anxious to claim the most important culmiferous plant as an indigenous production, I have no hesitation in denominating this wheat, discovered near Rome, *Triticum Americanum*.

"I also transmit by this opportunity specimens of a plant called the Wild Rye, which grows spontaneously and in considerable quantities in the country bordering on the upper parts of the Mohawk River; and I believe it might be cultivated to advantage."

CHAPTER IV.

ZOOLOGY.

THE living tribes occurring in the transatlantic republic open a wide and interesting field of observation. The ornithological department is particularly rich and striking; and the reptiles are numerous and powerful; and on the whole, the zoology of the United States may be said to be still more peculiar than either their mineralogy or their botany. We shall notice, in as copious a manner as our limits will allow, the principal objects of interest in the respective animal tribes.

The following general view of the mammiferous animals inhabiting the North American continent, is given by Dr. Harlan.* The number of species now ascertained is 147, in which, however, this author, like some other American and European writers, includes *man*; but, as it does not correspond with the purpose of this chapter to do so, we shall reckon the species at 146. Of these 28 are cetacea, and 118 are quadrupeds. Among the quadrupeds it is also to be noticed that Dr. Harlan reckons eleven species of which no living trace whatever is found, either in North America or in any other part of the world, and which he introduces only by virtue of their fossil remains; but if we allow a sufficient reason to exist for placing such animals in a scientific arrangement, they cannot, at all events, be regarded as forming a part of the present zoology of the North American continent. The number of living species of quadrupeds is, therefore, 107. The comparative numbers of the several orders are stated to be as follows:—

Primates, (not including man)	0
Carnivora, (in which Dr. Harlan includes the bat) .	60
Glires	37
Edentata	6
Pachydermata	2
Ruminantia	13
Cetacea	28

It thus appears that the monkey tribe is wholly excluded from the territory under review, together with the kindred animals constituting the order primates. In this order, however, the bat has been commonly reckoned, and we think with more propriety than where Dr. Harlan has placed it. Several species of this animal are found in the United States, but exhibiting no remarkable features. The following account of their manner of hybernation in a cave is given by Professor Green. "They did not appear to be much disturbed by the light of the torches

carried by our party, but, upon being touched with sticks, they instantly recovered animation and activity, and flew into the dark passages of the cavern. As the cave was for the most part not more than six or seven feet in height, they could very easily be removed from the places to which they were suspended; and some of the party who were behind me disturbed some hundreds of them at once, when they swept by me in swarms to more remote, darker, and safer places of retreat. In flying through the caves they made little or no noise; sometimes, upon being disturbed in one place, they flew but a few yards, and then instantly settled in another, in a state of torpor apparently as profound as before. These bats, in hybernating, suspended themselves by the hinder claws, from the roof or upper part of the cave: in no instance did I observe one along the sides. They were not promiscuously scattered, but were collected into groups or clusters of some hundreds, all in close contact. On holding a candle within a few inches of one of these groups, they were not in the least troubled by it; their eyes continued closed, and I could perceive no signs of respiration. On opening the stomach of one of these bats, it was found entirely empty."

The strictly carnivorous animals, or beasts of prey, form, as might be expected in so extensive and diversified a tract of uncultivated country, a large class of tenants of the American wilds. Here, however, we find neither the lion, nor the tiger, the hyæna, nor the leopard, nor any of those creatures, with which, as beasts of prey, we are most familiar, and which make so conspicuous a figure in African and Asiatic regions. The largest animal of this kind in the United States is the cougar. This is commonly, but improperly, called the panther, and has occasionally received the name of the American lion, from the similarity of its proportions and colour to the lion of the old world. He is little inferior in size, and not at all in the fancied qualities of magnanimity, clemency, and generosity, which have been so lavishly attributed to the "king of beasts." He may be stated to be about one third less than the lion; he has no mane, nor any tuft at the extremity of the tail, which is about half the length of the body and head. The cougar was at an early period distributed in considerable number over the whole of the warm and temperate regions of this continent, and it is still found, though by no means abundantly, in the southern, middle, and north-western parts of the union, becoming, however, gradually more rare as the population increases, and cultivation is extended. It is a savage and destructive animal, yet

* Fauna Americana.

timid and cautious. In ferocity it is quite equal to most of its kindred species; it kills numbers of small animals for the sake of drinking their blood, and, when pressed by hunger, attacks large quadrupeds, though not always with success. When the cougar seizes a sheep or a calf, it is by the throat; and then, flinging the victim over its back, it dashes off with great ease and celerity, to devour it at leisure. Deer, hogs, sheep, and calves, are destroyed by the cougar whenever they are within reach; and occasionally these animals have committed extensive ravages among the stock of the frontier settlers. They climb, or rather spring up large trees with surprising facility, and vigour, and in that way are enabled, by dropping suddenly upon deer and other quadrupeds, to secure prey which it would be impossible for them to overtake. In the day-time the cougar is seldom seen: but its peculiar cry frequently thrills the experienced traveller with horror, while encamping in the forest at night; or he is startled to hear the cautious approaches of the animal, stealing step by step towards him over the crackling brushwood and leaves, in expectation of springing on an unguarded or sleeping victim, whom nothing but a rapid flight can save.

The northern lynx is a fierce and subtle creature, exhibiting most of the traits of character which distinguish animals of the cat kind. To the smaller quadrupeds, such as rabbits, hares, lemmings, &c., it is exceedingly destructive, never leaving the vicinities they frequent until their numbers are altogether destroyed, or exceedingly thinned. But the ravages of the northern lynx are not confined to such small game: it drops from the branches of trees on the necks of deer, and clinging firmly with its sharp-hooked claws, ceases not to tear at the throat and drink the blood of the animal, until it sinks exhausted, and expires. It attacks sheep and calves in the same manner, and preys upon wild turkeys and other birds, which it is capable of surprising even on the tops of the highest trees.

The United States, to which Dr. Godman thinks the brown bear is not native, presents us with two principal species of this animal, of remarkably different characteristics. The black bears feed principally on grapes, plums, whortleberries, persimmons, bramble and other berries; they are also particularly fond of the acorns of the live oak, on which they grow excessively fat in Florida. In attempting to procure these acorns, they subject themselves to great perils; for, after climbing these enormous oak trees, they push themselves along the limbs towards the extreme branches, and with their fore-paws bend the twigs within reach, thus exposing themselves to severe and

even fatal accidents, in case of a fall. They are also very fond of the different kinds of nuts and esculent roots; and often ramble to great distances from their dens in search of whortleberries, mulberries, and indeed all sweet-flavoured and spicy fruits. Birds, small quadrupeds, insects, and eggs, are also devoured by them whenever they can be obtained. They are occasionally very injurious to the frontier settlers, by their incursions in search of potatoes and young corn, both of which are favourite articles of food. Their claws enable them to do great mischief in potato grounds, as they can dig up a large number in a short time; and where the bears are numerous, their ravages are occasionally very extensive. In the vicinity of Hudson's Bay, the black bear has been observed to feed entirely on water-insects, during the month of June, when the berries are not ripe. These insects, of different species, are found in astonishing quantities in some of the lakes; the bear, swimming with his mouth open, gathers those on the surface of the water. They are even believed to feed on those which die, and are washed on shore. The flesh of the animal is spoiled by this diet; though individuals killed at a distance from the water are agreeably flavoured at the same time of the year. The black bear is in fact very indiscriminate in his feeding, and though suited by nature for the almost exclusive consumption of vegetable food, he refuses scarcely any thing when pressed by hunger; he is, moreover, voracious as well as indiscriminate in satisfying his appetite, and frequently gorges until his stomach loathes and rejects its contents. He seeks with great assiduity for the larvæ or grubs of various insects, and exerts a surprising degree of strength in turning over large trunks of fallen trees, which, whenever sufficiently decayed to admit of it, he tears to pieces in search of worms. When the bear seizes a living animal, he does not, as most other beasts do, first put it to death, but tears it to pieces and devours it, without being delayed by its screams or struggles, and may be actually said to swallow it alive.

The black bear, under ordinary circumstances, is not remarkably ferocious, nor is he in the habit of attacking man without provocation; but, when wounded, he turns on the aggressor with great fury, and defends himself desperately. They are occasionally found throughout the territories of the United States, in the wooded and mountainous regions, and in unsettled districts, where their skins are of great value to the inhabitants, as a substitute for blankets and other manufactured woollens. They are still numerous in the wooded and thinly settled parts of Pennsylvania, as well as in most of the other states

of the Union; and, where their favourite food is plentiful, they grow to a great size, and afford a large quantity of oil. Bartram relates that he was present at the cutting up of one which weighed five or six hundred pounds, and says that his hide was apparently as large as that of an ox of six or seven hundred weight. The Indians consider this bear as one of the noblest objects of the chase, and they always manifest the highest degree of exultation when they are successful in killing one. Every part of the animal is valuable to them, even to its intestines and claws; the latter are bored at the base, and strung on deer sinews, to be worn as ornaments; the flesh is considered most delicious food, and the fore-paws as an exquisite dainty. The black bear, in common with other species of the genus, endeavours to suffocate an adversary by violently hugging and compressing its chest. A man might end such a struggle in a few instants, if one hand were sufficiently at liberty to grasp the throat of the animal with the thumb and fingers, externally, just at the root of the tongue; as a slight degree of compression there will generally suffice to produce almost immediate suffocation.

The grizzly bear is of a totally opposite character. This animal is justly considered as the most dreadful and dangerous of North American quadrupeds, and is the despotic and sanguinary monarch of the wilds over which he ranges. Gigantic in size, and terrific in aspect, he unites to a ferociously blood-thirsty disposition a surpassing strength of limb, which gives him undisputed supremacy over every other tenant of the wilderness, and causes man himself to tremble at his approach. To the Indians, the very name of the grizzly bear is dreadful, and the killing of one is esteemed equal to a great victory. The white hunters are almost always willing to avoid an encounter with so powerful an adversary, and seldom wantonly provoke him. This formidable animal unhesitatingly pursues and attacks men or animals, when excited by hunger or by passion, and slaughters indiscriminately every creature whose speed or artifice is not sufficient to place them beyond his reach. He is capable, however, like the rest of his tribe, of living on vegetable food. This bear at present inhabits the country adjacent to the eastern side of the Chippewyan Mountains, where it frequents the plains, or resides in the copses of wood which skirt the margin of water-courses; and there is some traditional reason to believe, that it once inhabited the Atlantic regions of the United States. As a specimen of his manners, we extract the following narrative:—"One evening, the men in the hindmost of one of Lewis and Clark's canoes perceived one of

these bears lying in the open ground, about three hundred paces from the river; and six of them, who were all good hunters, went to attack him. Concealing themselves by a small eminence, they were able to approach within forty paces, unperceived: four of the hunters now fired, and each lodged a ball in his body, two of which passed directly through the lungs. The bear sprang up, and ran furiously with open mouth upon them: two of the hunters, who had reserved their fire, now gave him two additional wounds, and one, breaking his shoulder-blade, somewhat retarded his motions. Before they could again load their guns, he came so close on them that they were obliged to run towards the river; and before they had gained it, the bear had almost overtaken them. Two men jumped into the canoe; the other four separated, and concealing themselves among the willows, fired as fast as they could load their pieces. Several times the bear was struck, but each shot seemed only to direct his fury towards the hunter: at last, he pursued them so closely, that they threw aside their guns and pouches, and jumped from a perpendicular bank, twenty feet high, into the river. The bear sprang after them, and was very near the hindmost man, when one of the hunters on the shore shot him through the head, and finally killed him. When they dragged him on shore, they found that eight balls had passed through his body in different directions."

The common wolf of America is considered to be the same species as the wolf of Europe. When the aboriginal Americans first gave place to European adventurers, and the forests, which had flourished for ages undisturbed, began to fall before the unsparing axe, the vicinity of the settler's lonely cabin resounded with the nightly howling of wolves, attracted by the refuse provision usually to be found there, or by a disposition to prey upon the domestic animals. During winter, when food was most difficult to be procured, packs of these famished and ferocious creatures were ever at hand, to run down and destroy any domestic animal found wandering beyond the enclosures, which their individual or combined efforts could overcome; and the boldest house-dog could not venture far from the door of his master, without incurring the risk of being killed and devoured. The common wolf was then to be found in considerable numbers, throughout a great extent, if not throughout the whole, of North America; at present, it is only known as a resident of the remote wooded and mountainous districts, where man has not fixed his abode. The prairie, or barking wolf, frequents the prairies of the west, where troops or

packs, containing a considerable number of individuals, are frequently seen following in the train of a herd of the buffalo or deer, for the purpose of preying on such as may die from disease, or in consequence of wounds inflicted by the hunters; at night they also approach the encampments of travellers, whom they sometimes follow for the sake of the carcases of animals which are relinquished, and, by their discordant howlings close to the tents, effectually banish sleep from those who are unaccustomed to their noise. They are more numerous than any of the other wolves which are found in North America. In appearance, the barking wolf closely resembles the domestic dog of the Indians, and is remarkably active and intelligent. Like the common wolf, the individuals of this species frequently unite to run down a deer, or a buffalo calf, which has been separated from the herd; though it requires the fullest exercise of their speed, sagacity, and strength, to succeed in this chase. They are very often exposed to great distress from want of food; and, in this state of famine, are under the necessity of filling their stomachs with wild plums, or other fruits no less indigestible, in order to allay the sensations of hunger.

Red foxes, resembling, but not identical with the common fox of Europe, are very numerous in the middle and southern states of the union, and are everywhere notorious depredators on the poultry-yards. Their haunts are most commonly in exceedingly dense thickets of young pine, where they can scarcely be followed even by dogs. The gray fox is very common throughout this country, and is found more immediately in the vicinity of human habitations than either of the other species. It is pursued by the sportsmen with more pleasure than the red fox, because it does not immediately forsake its haunts, and run for miles in one direction, but, after various doublings, is generally killed near the place whence it first started. A small species, called the swift fox, inhabits the plains east of the Chippewayan Mountains. The most remarkable circumstance peculiar to this fox is its extraordinary swiftness, which all who have seen it agree in declaring to surpass that of any other animal with which we are at present acquainted. The fleetest antelope or deer, when running at full speed, is passed by this little fox with the greatest ease; and such is the celerity of its motion, that it is compared to the flight of a bird along the ground, rather than the course of a quadruped. Other observers have stated, that, when in full speed over the plain, the effect produced on the eye makes the animal resemble a line drawn rapidly along the surface; so impossible is it to distinguish

any of the parts of its body, on account of its surprising velocity.

A species of otter, analogous to the European, is found in the United States. In the southern, middle, and eastern states of the union, they are comparatively scarce; but in the western states they are in many places still found in considerable numbers, and on the tributaries of the Missouri they are very common. A singular sportive habit has been observed in them, viz. that of sliding; and for this purpose, in winter, the highest ridge of snow is selected, to the top of which the otters scramble, where, lying, on the belly, with the fore feet bent backwards, they give themselves an impulse with their hind legs, and swiftly glide head foremost down the declivity, sometimes for the distance of twenty yards. This sport they continue, apparently with the keenest enjoyment, until fatigue or hunger induces them to desist. In the summer this amusement is obtained by selecting a spot where the river bank is sloping, has a clayey soil, and the water at its base is of a considerable depth. The otters then remove from the surface, for the breadth of several feet, the sticks, roots, stones, and other obstructions, and render it as level as possible. They climb up the bank at a less precipitous spot, and starting from the top, slip with velocity over the inclining ground, and plunge into the water to a depth proportioned to their weight and rapidity of motion. After a few slides and plunges, the surface of the clay becomes very smooth and slippery, and the rapid succession of the sliders shows how much these animals are delighted by the game, as well as how capable they are of performing actions which have no other object than that of pleasure or diversion. This amusement is so congenial to the frolic spirit of boyhood, that in vicinities where otter-slides are found, youngsters, while bathing, sometimes take possession of one, and, sitting at the top, glide thence with great glee into the water.

Pedestrians, led by business or by pleasure to ramble through the country during the morning or evening twilight, occasionally see a small and pretty animal a short distance before them in the path, scampering forward without appearing much alarmed, and advancing in a zig-zag or somewhat serpentine direction. Experienced persons generally delay long enough to allow this unwelcome fellow-traveller to withdraw from the path; but it often happens that a view of the animal arouses the ardour of the observer, who, in his fondness for sport, thinks not of any result but that of securing a prize. It would be more prudent to rest content with pelting this quadruped from a safe distance, or to drive it away by shouting loudly.

but almost all inexperienced persons, the first time such an opportunity occurs, rush forward with intent to run the animal down. This appears to be an easy task. In a few moments it is almost overtaken; a few more strides, and the victim may be grasped by its long and waving tail—but that tail is now suddenly curled over the back, its pace is slackened, and in one instant the condition of things is entirely reversed; the lately triumphant pursuer is eagerly flying from his intended prize, involved in an atmosphere of stench, gasping for breath, or blinded and smarting with pain, if his approach were sufficiently close to allow of his being struck in the eyes by the pestilent fluid of the skunk. Should the attack on this creature be led by a dog, and he be close when the disgusting discharge is made, he runs with tail between his legs howling away, and, by thrusting his nose into the soil as he retreats, tries to escape from the horrible effluvium, which renders the air in the immediate vicinity too stifling to be endured. This animal is the skunk, which inhabits the whole of North America, in the forests or their immediate vicinity.

Raccoons also are found throughout the whole of North America; and they still continue to be numerous in many of the well-peopled parts of the United States. Occasionally their numbers are so great as to render them very troublesome to the farmers in the low and wooded parts of Maryland, bordering on the Chesapeake Bay. To the capricious mischievousness of the monkey the raccoon adds a blood-thirsty and vindictive spirit peculiarly his own. In the wild state, his sanguinary appetite frequently leads to his own destruction, which his nocturnal habits might otherwise avert; but, as he slaughters the tenants of the poultry-yard with indiscriminate ferocity, the vengeance of the plundered farmer speedily retaliates on him the death so liberally dealt among the feathered victims. The fur of the raccoon forms an article of considerable value in commerce, as it is largely employed in the fabrication of hats. The American badger is a pretty little animal, and its aspect is not unlike that of some small pug-faced dogs. It is found most frequently on the plains adjacent to the Missouri and its tributaries, as well as on those near the Columbia river, both in the open country and in the woods. The wolverene, or American glutton, is one of the most destructive animals found in the northern parts of the continent. He is slow in his motions, but strong, and full of stratagem. He causes much trouble to hunters and travellers who attempt to secure provisions by burying them in the snow, or to protect them by coverings of boughs and trunks of

trees; since it is almost impossible to prevent this creature from gaining access to such places of deposit, either by strength or by stratagem, and destroying the stock on which the voyager may have counted for his future subsistence and safety. To the hunters the wolverene is also very injurious, by robbing their traps of the animals which are taken in them, before the arrival of the owners. Among the small quadrupeds inhabiting this continent, few are to be found equalling the ermine in beauty; perhaps none that excel it in the qualities of courage, graceful celerity of movement, and untiring activity. Its whole aspect inspires the beholder with an idea of its character, which is well supported by its actions. It is found in the northern and middle states, and its habits are similar to those of the common weasel of Europe.

The shrews belonging to this country are remarkable for their diminutive size and apparent helplessness. They are generally found in the country, where their residence is either in burrows, or among heaps of stones, or in holes made by other animals; near dung-heaps, or hay-ricks, or privies, they are more numerous than elsewhere. Insects are their principal subsistence, but they seem no less fond of grain, putrid flesh, and filth of various sorts; as they have been occasionally seen rioting in ordure, in a manner similar to the hog. The shrew-mole is found abundantly in North America, from Canada to Virginia, often living at no great distance from water-courses, or in dykes thrown up to protect meadows from inundation. This creature, when at rest, bears more resemblance to a small stuffed sack than to a living animal, its head being entirely destitute of external ears, and elongated nearly to a point, and its eyes so extremely small, and completely hidden by the fur, that it would not be surprising should a casual observer conclude this creature to be blind. It is endowed, however, with considerable powers of action, and doubtless of enjoyment; though we can not enter here into the details of its extensive and curious subterraneous operations.

The usual haunts of the opossum are thick forests, and their dens are generally in the hollows of decayed trees, where they pass the day asleep, and sally forth mostly after nightfall to seek for food. The hunting of the opossum is a favourite sport with the country people, who frequently go out with their dogs at night, after the autumnal frosts have begun, and the persimmon fruit is in its most delicious state. The opossum, as soon as he discovers the approach of his enemies, lies perfectly close to the branch, or places himself snugly in the angle where two limbs sepa-

rate from each other; the dogs, however, soon announce the fact of his presence, by their baying, and the hunter, ascending the tree, discovers the branch upon which the animal is seated, and begins to shake it with great violence, to alarm and cause him to relax his hold. This is soon effected; and the opossum, attempting to escape to another limb, is pursued immediately, and the shaking is renewed with greater violence, until at length the terrified quadruped allows himself to drop to the ground, where hunters or dogs are prepared to dispatch him. Should the hunter, as frequently happens, be unaccompanied by dogs, when the opossum falls to the ground, it does not immediately make its escape, but steals slowly and quietly to a little distance, and then, gathering itself into as small a compass as possible, remains as still as if dead. After remaining in this apparently lifeless condition for a considerable time, or so long as any noise indicative of danger can be heard, the creature slowly unfolds himself, and, creeping as closely as possible upon the ground, would fain sneak off unperceived; but upon a shout or outcry in any tone from his persecutor, he immediately renews his deathlike attitude and stillness. If then approached, moved, or handled, he is still seemingly dead, and might deceive any one not accustomed to his actions. This artifice is repeated as frequently as opportunity is allowed him of attempting to escape, and is known so well to the country people as to have long since passed into a proverb. "He is playing the opossum," is a phrase applied with great readiness by them to any one who is thought to act deceitfully, or wish to appear what he is not.

The beaver has, at a former period, inhabited the territory of the United States much more extensively than at present. In various parts of the western country, where they are at present entirely unknown, except by tradition, the dams constructed by their labours are still standing securely, and in many instances serve instead of bridges to the streams they obstruct. There are few states in the union in which some remembrance of this animal is not preserved by such names as Beaver-Dam, Beaver-Lake, Beaver-Falls, &c. In situations where it is frequently disturbed, all its singular habits are relinquished, and its mode of living changed to suit the nature of circumstances; instead of building dams and houses, its only residence is then in the banks of the stream, where it is forced to make an extensive excavation, and to be content to adopt the manners of a muskrat. More sagacity is displayed by the beaver in thus accommodating itself to circumstances, than in any other action it performs. Such is the caution

which it exercises to guard against detection, that were it not for the removal of small trees, the stumps of which indicate the sort of animal by which they have been cut down, the presence of the beaver would not be suspected in the vicinity. All excursions for the sake of procuring food are made late at night; and if it pass from one hole to another during the daytime, it swims so far under water as not to excite the least suspicion of the presence of such a voyager. On many parts of the Mississippi and the Missouri, where the beaver formerly built houses according to the usual mode, no such works are at present to be found, although beavers are still to be trapped in those localities. These circumstances throw light on the character of the European beaver, which has been thought to belong to another species, because it does not build. The value of the fur of these animals is well known. The capture, or trapping of them, is a large part of the business both of the Indians and the whites. It is a subject of regret that an animal so valuable and so prolific should be hunted in a manner tending to the extermination of the species, when a little care and management on the part of those interested might prevent unnecessary destruction, and preserve the sources of their revenue. In the Hudson's Bay possessions they are becoming annually more scarce, and the race will eventually be extinguished throughout the whole continent; though a few individuals may, for a time, elude the immediate violence of persecution.

The muskrat, which is closely allied in form and habits to the beaver, does not, like that timid animal, retire from the vicinities inhabited by man; but, relying on its peculiar instinct for concealment, remains secure, notwithstanding the changes induced by cultivation, and multiplies its species in the very midst of its enemies. Thus, while the beaver has long since entirely disappeared, and become forgotten, in the Atlantic states, the muskrat is found within a very short distance of the largest and oldest cities, and bids fair to maintain its place in such situations during an indefinite future period. The animal owes this security to its nocturnal and aquatic mode of life, as well as to the peculiar method in which its domicile is constructed. Along small streams, mill-races, and ponds, where the banks are of some elevation and strength, the muskrats form large and extensive burrows. These have their entrance always in the deep water, so as to be entered or left without betraying the presence of the animal. The mouth of the burrow ascends from its commencement near the bottom, and slopes upwards until it is above the level of the highest water; it then extends to great dis-

tances, according to the numbers or necessities of the occupants. Like most other animals residing in such burrows, the musk-rats frequently excavate them beneath the roots of large trees, where they are secure from being disturbed by having their home broken into from above. The injuries done by the musk-rat to the banks thrown up to exclude the tide from meadows and other grounds, are frequently very extensive. The tide encroaches more and more on the burrow, as the soil softens and is washed away; the animals extend their excavations in various directions, in order to free themselves from the intrusion of the water; and, at length, from the combination of both causes, the bank falls in, and the water is allowed free access, often laying waste the most valuable parts of the farm. To understand the extent to which such mischief may be carried, it is sufficient to take a walk along the banks thrown up to protect the meadows on the Delaware, on both sides of the river. Similar, though not as extensive injury, is produced along the borders of ponds, embankments, and small streams, by the falling in of the burrows formerly tenanted by the musk-rat.

The meadow-mouse is found in various degrees of abundance throughout this country, and, as implied in its name, prefers the meadow and grass fields to other situations. The banks of drains, and those thrown up to keep off the tide or the overflow of streams, are the favourite places for their burrows, which are both numerous and extensive, being continued in various directions and to considerable depths. These burrows are frequently causes of injury similar to that resulting from those of the musk-rat. "The wood-rat," says Bartram, "is a very curious animal: they are not half the size of the domestic rat, and of a dark brown or black colour; their tail slender and shorter in proportion, and covered thinly with short hair. They are singular with respect to their ingenuity and great labour in the construction of their habitations, which are conical pyramids, about three or four feet high, constructed with dry branches, which they collect with great labour and perseverance, and pile up without any apparent order; yet they are so interwoven with one another, that it would take a bear or wild cat some time to pull one of these castles to pieces, and allow the animals sufficient time to secure a retreat with their young." The wood-rat has, beyond doubt, been as common throughout this country at a former period, as it is at present in Florida and on the Missouri. It has very universally given place to the black-rat, and both have disappeared before the Norway rat. The wood-rat soon learns to infest the

houses of the settlers, and to do nearly, if not quite, as much mischief, as the common rat. In Florida, Georgia, and the plains adjacent to the Missouri, the pouched-rat is to be found in great numbers; their burrows are exceedingly numerous in various places, and give an appearance to the plains similar to that produced by ploughing. Over their burrows hillocks of loose earth are raised, resembling in some respects those thrown up by the shrew-mole. The jumping-mouse is a little animal very remarkable for the great length of its hind legs, and for its mode of progression, in both of which it bears some resemblance to the kangaroo of Australia, and the jerboa of the old continent. When the jumping-mouse is pursued by one or two persons, and permitted to advance in one direction, its movements resemble those of a bird rather than a quadruped, so high does it leap into the air, so great is the distance it measures at every bound, and so light and quick is its ascent and descent. The jumping-mouse, however, does not exclusively move in this manner, but is capable of running on all its feet with considerable speed; hence it frequently excites the wonder of the country people, or gives them much labour in vain, when they attempt to run it down.

The marmot is a common animal in all the temperate parts of the country, and is the cause of great injury, especially to the farmers engaged in the cultivation of clover, as their numbers become very considerable, and the quantity of herbage they consume is very large. They are the more capable of doing mischief, from their extreme vigilance and their acute sense of hearing, as well as from the security afforded them by their extensive subterranean dwellings. One species of this animal, under the name of the prairie marmot, or prairie dog, abounds near the Chipewyan Mountains. A traveller passing from the Mississippi towards the mountains, after traversing a vast expanse enlivened by numerous herds of browsing animals which here find a luxurious subsistence, and arriving at the higher and more barren parts of the tract, is startled by a sudden shrill whistle, which he may apprehend to be the signal of some lurking savage; but, on advancing into a clearer space, the innocent cause of alarm is found to be a little quadruped, whose dwelling is indicated by a small mound of earth, near which the animal sits erect in an attitude of profound attention. Similar mounds are now seen to be scattered at intervals over many acres of ground; and the whole forms one village or community, containing thousands of inhabitants, whose various actions and gambols awaken very pleasing emotions. In some instances these villages are very

limited, or at most occupy but a few acres; but nearer to the Rocky Mountains, where they are entirely undisturbed, they are found to extend even for miles. We may form some idea of the number of these animals, when we learn that each burrow contains several occupants, and that frequently as many as seven or eight are seen reposing upon one mound. Here, in pleasant weather, they delight to sport, and enjoy the warmth of the sun. On the approach of danger, while it is yet too distant to be feared, they bark defiance, and flourish their little tails with great intrepidity; but, as soon as it appears to be drawing nigh, the whole troop precipitately retire into their cells, where they securely remain until the peril be past; one by one they then peep forth, and vigilantly scrutinize every sound and object, before they resume their wonted actions. While thus near to their retreats, they almost uniformly escape the hunter; and, if killed, they mostly fall into their burrows, which are too deep to allow their bodies to be obtained. The villages found nearest the mountains have an appearance of greater antiquity than those observed elsewhere; some of the mounds in such situations are several yards in diameter, though of slight elevation, and, except about the entrance, are overgrown by a scanty herbage, which is characteristic of the vicinity of these villages. This active and industrious community of quadrupeds, like every other society, is infested by various depredators, who subsist by plunder, or are too ignorant or too indolent to labour for themselves; and hence a strange association is frequently observed in their villages; for burrowing-owls, rattlesnakes, lizards, and land-tortoises, are seen to take refuge in their habitations. The young of the marmot probably become the prey of the owl. The rattlesnakes also exact their tribute with great certainty, and without exciting alarm, as they can penetrate the inmost recesses of the burrow, and a slight wound inflicted by their fangs is followed by the immediate extinction of life.

The species of the squirrel inhabiting the United States are numerous and beautiful. Like most of the animals belonging to this order, they are very prolific, and multiply until large districts of country are injuriously overrun by them; they then invade, and literally lay waste the corn-fields, consuming vast quantities of grain, and destroy nearly as much as they eat, by breaking it down and scattering it on the ground. On such occasions, the farmers in thinly-settled districts severely suffer. The efforts of a whole family are sometimes insufficient to drive off or destroy these busy plunderers. In the state of Ohio, in the autumn of 1822, says Dr. Godman, parts

of the country appeared to swarm with squirrels, which were so numerous that, in travelling along the high road, they might be seen scampering in every direction; the woods and fields might be truly said, in the country phrase, to be "alive with them." A farmer, who had a large field of Indian corn near the road, stated, that, notwithstanding the continued exertions of himself and his two sons, he feared he should lose the greater part of his crop, in addition to his time, and the expense of ammunition used in killing and scaring off the little robbers. This man and his sons frequently took stations in different parts of the field, and killed squirrels until their guns became too dirty to be used with safety; yet they always found, on returning, that the squirrels had mustered as strong as before. Squirrel-shooters were frequently met with heavily laden with this game, which, in many instances, they had only desisted from slaying through want of ammunition, or through mere fatigue. Fortunately for the farmers, these animals are not at the same time equally numerous in all parts of the country. During some seasons, they appear to move in a mass, deserting certain districts entirely, and concentrating themselves in others; in such migrations, vast numbers are drowned in crossing the rivers, and many are also destroyed by beasts and birds of prey, and various other causes.

The American porcupine exhibits none of the long and large quills which are so conspicuous and formidable in the European species; and the short spines, or prickles, which are thickly set over all the superior parts of its body, are covered by a long coarse hair, which almost entirely conceals them. These spines are not more than two inches and a half in length, yet they form a very efficient protection to the animal against every other enemy but man. In the remote and unsettled parts of Pennsylvania, the porcupine is still occasionally found; but south of this state, it is almost unknown. In the Hudson's Bay country, Canada, and New England, as well as in some parts of the western states, and throughout the country lying between the Rocky Mountains and the great western rivers, they are found in great abundance, and are highly prized by the aborigines, both for the sake of their flesh and their quills, which are very extensively and very ingeniously employed by the Indian women, as ornaments of dress.

The American hare never burrows in the ground, like the common European rabbit. When confined in a yard, the animal has been known to attempt an escape by scratching a hole in the earth, near the fence or wall; but there are few wild animals, whatever may be their character, that will not do the

same under similar circumstances, though in their natural condition they may never attempt to burrow. Such is the fact in relation to the American hare, which never burrows while it is a free tenant of the fields and woods. It has been said, that this animal also occasionally ascends trees; this must be understood solely of its going up within the trunks of hollow trees, which it effects by pressing with its back and feet against opposite sides of the hollow, ascending somewhat in the same manner as a sweep climbs a chimney. The hare is not hunted in America as in Europe, but is generally roused by a dog, and shot, or is caught in various snares and traps. In its movements it closely resembles the common hare of Europe, bounding along with great celerity; and would, no doubt, when pursued, resort to the artifices of doubling, &c., so well known to be used by the European animal.

The sloth is not found in the republic, except in a fossil state; and these remains are of three gigantic but extinct species. Not even fossil traces have occurred of the kindred animals. We have already noticed the remains of the mastodon, which is allied to the elephant; and may here add, that bones of an extinct species of elephant also have been found. No living animal of that entire order appears to exist on the North American continent.

The ruminant animals abound. The species of deer come first to our notice. The moose was formerly found throughout the New England states, but is now confined to that of Maine, and is there becoming unfrequent. Judging by the rapid diminution of this species within a comparatively few years, it is to be feared that it will, at no great distance of time, be exterminated. The American elk is a stately and beautiful animal, which is believed at some period to have ranged over the greater part, if not the whole, of the continent. There is much confusion in the several accounts given by naturalists of the moose and the elk. Dr. E. H. Smith, of New York, pronounces them different animals, and has given a paper on the subject in the *Medical Repository*.* The common deer is the smallest American species at present known, and is found throughout the country between Canada in the north, and the banks of the Orinoco in South America. It has always been of great importance to the aborigines of America, as an abundant source of food and raiment; nor has its value been less to the pioneers of civilization, in their advances into the untrodden solitudes of the west. The improvements in agriculture have

long since rendered this supply of food of comparatively little value to the white man; yet vast numbers of this species are annually destroyed, equally for the sake of their flesh, hides, and horns. Notwithstanding this extensive consumption, however, the species does not appear to be very rapidly diminishing, if we except the immediate vicinity of very thickly-peopled districts. Even in these, where the destruction of deer during the breeding-season is prevented by law, the increase seems quite equal to the demand; and such humane and judicious provisions will probably preserve this beautiful race to adorn the forests, long after the species is exterminated in situations where it is not thus protected.

The prong-horn antelope is a beautiful creature, ranging over the Chippewayan Mountains. It is of wonderful fleetness, and so shy and timorous, as but seldom to repose, except on ridges which command a view of the surrounding country. The acuteness of their sight, and the exquisite delicacy of their smell, render it exceedingly difficult to approach them; and, when once danger is perceived, the celerity with which the ground is passed over appears to the spectator to resemble the flight of a bird, rather than the motion of a quadruped. "The chief game of the Shoshonees," say Lewis and Clarke, "is the antelope; which, when pursued, retreats to the open plains, where the horses have full room for the chase. But such is its extraordinary fleetness and wind, that a single horse has no possible chance of outrunning it, or tiring it down; and the hunters are, therefore, obliged to resort to stratagem. About twenty Indians, mounted on fine horses, armed with bows and arrows, left the camp: in a short time they descried a herd of ten antelopes; they immediately separated into squads of two or three, and formed a scattered circle round the herd for five or six miles, keeping at a wary distance, so as not to alarm them till they were perfectly enclosed, and usually selecting some commanding eminence as a stand. Having gained their positions, a small party rode towards the herd, and, with wonderful dexterity, the huntsman preserved his seat, and the horse his footing, as he ran at full speed over the hills and down the steep ravines, and along the borders of the precipices. They were soon outstripped by the antelopes, which, on gaining the other extremity of the circle, were driven back, and pursued by the fresh hunters. They turned, and flew, rather than ran, in another direction; but there, too, they found new enemies. In this way they were alternately pursued, backwards and forwards, till at length, notwithstanding the skill of the hunters, (who were merely armed with bows and ar-

rows,) they all escaped; and the party, after running for two hours, returned without having caught any thing, and their horses foaming with sweat. This chase, the greater part of which was seen from the camp, formed a beautiful scene; but to the hunters it is exceedingly laborious, and so unproductive, even when they are able to worry the animal down and shoot him, that forty or fifty hunters will sometimes be engaged for more than half a day, without obtaining more than two or three antelopes." The Chippewayan Mountains have afforded also one species of goat, and one of sheep, of which it might be well for more to be known.

Of the ox kind, the bison, or buffalo, is the only, and a very remarkable species. The buffalo was formerly found throughout the whole territory of the United States, with the exception of that part which lies east of Hudson's River and Lake Champlain, and of narrow strips of coast on the Atlantic Ocean and the Gulf of Mexico. At present it is scarcely seen east of the Mississippi. Its great range is over the plains between this river and the Chippewayan Mountains, but it is met with also in the territory of Oregon. To the Indians and the visitors of the western regions, the bison is almost invaluable: they supply a large part of the food used by the natives, and covering to their tents and persons; while, in many parts of the country, there is no fuel to be obtained but the dried dung of this animal. The herds of bison wander over the country in search of food, usually led by a bull most remarkable for strength and fierceness. While feeding, they are often scattered over a great extent of country; but when they move in a mass they form a dense and almost impenetrable column, which, once in motion, is scarcely to be impeded. Their line of march is seldom interrupted, even by considerable rivers, across which they swim without fear or hesitation, nearly in the order in which they traverse the plains. When flying before their pursuers, it would be in vain for the foremost to halt, or to attempt to obstruct the progress of the main body; as the throng in the rear still rush onward, the leaders must advance, although destruction awaits the movement. The Indians take advantage of this circumstance, to destroy great quantities of this favourite game; and, certainly, no mode could be resorted to more effectually destructive, nor could a more terrible devastation be produced, than by forcing a numerous herd of these large animals to leap together from the brink of a dreadful precipice, upon a rocky and broken surface a hundred feet below. When the Indians determine to destroy bison in this way, one of their swiftest-footed and

most active young men is selected, who is disguised in a bison skin, having the head, ears, and horns adjusted on his own head, so as to make the deception very complete; and, thus accoutred, he stations himself between the bison herd and some of the precipices which often extend for several miles along the rivers. The Indians surround the herd as nearly as possible; when, at a given signal, they show themselves, and rush forward with loud yells. The animals being alarmed, and seeing no way open but in the direction of the disguised Indian, run towards him, and he, taking to flight, dashes on to the precipice, where he suddenly secures himself in some previously-ascertained crevice. The foremost of the herd arrives at the brink—there is no possibility of retreat, no chance of escape: the foremost may, for an instant, shrink with terror; but the crowd behind, who are terrified by the approaching hunters, rush forward with increasing impetuosity, and the aggregated force hurls them successively from the cliff, where certain death awaits them.

We may here introduce, from Dr. Harlan, a statement of North American quadrupeds which he conceives to be common both to the new and the old world.

Species.	Species.	Species.
1 Mole.	2 Wolf.	1 Field-mouse.
2 Shrew.	2 Fox.	1 Campagnol, (rat.)
1 Bear.	2 Seal.	1 Squirrel.
1 Glutton.	2 Weasel.	2 Deer.
1 Otter.	1 Beaver.	1 Sheep.

The whole number of common species is twenty-one; leaving eighty-six species as peculiar to North America, though not all of them to the United States.

Among cetaceous animals, the lamantin, or sea-cow, is found on the coast of Florida. When full grown, it is from fifteen to twenty feet in length, by eight in circumference, and weighs several thousand pounds. After having satisfied its hunger by feeding on the sea grass or fucus, which constitutes its principal nourishment, it delights to sleep upon the marshy grounds in the shallows, where it lies with the snout elevated above the water. It is there easily taken by the harpooners. "Shoals of dolphins," says Dr. Godman, "may be seen almost every day, and at any hour, feeding or sporting in the bay and rivers near the city of New York, where we have sometimes enjoyed an opportunity of observing, from the wharf, a large shoal of them moving down the Hudson with the tide; some plunging along, as if in haste, others apparently at play, and others very slowly rising to the surface for breath, and as gradually disappearing, allowing their dorsal fin to remain for a considerable

time above the surface." From the month of May until towards the end of autumn, the true dolphins frequent the bays and salt-water rivers of the United States, in great numbers. They are most numerous and are best observed during the run of the herring and shad, upon which they doubtless feast abundantly; they appear gradually to diminish in number as these fish retire from the rivers and coast, though a small party may be occasionally seen very late in the season. The gladiator dolphins, so celebrated for attacking and destroying the whales, are found on the New England coasts. As they commonly swim in small troops, they attack the whale in a body, and tear off great pieces of his flesh, until, becoming excited to a certain degree, he thrusts out his tongue, when they immediately fasten on this organ and devour it, and finally gaining access to his mouth, they destroy the life of the animal. The porpoise, or sea-swine, is not ascertained to have been seen in the waters of the republic; the animal generally called by this name is the true dolphin. The spermaceti cachalot is found in the greatest abundance in the Pacific Ocean, where large numbers of them are annually killed by the American and other whalers, for the sake of their oil and spermaceti.

The Ornithology of the United States exhibits a rich display of the most splendid colours, from the green, silky, gold-bespangled down of the minute humming-bird, scarcely three inches in extent, to the black coppery wings of the gloomy condor, of sixteen feet, an occasional visitant of the republic; a numerous and powerful band of songsters, which, for sweetness, variety, and melody, are surpassed perhaps by no country on earth; an ever-changing scene of migration from torrid to temperate, and from northern to southern regions, in quest of suitable seasons, food, and climate; and an amazing diversity in habit, economy, form, disposition, and faculties. The study of this branch of the natural history of their adopted country seems to have been long neglected by its new inhabitants, the manners, language, and faces of the feathered tribes being in general either overlooked or unknown; and the substantial enlargement of science in this department is mainly to be referred to Alexander Wilson, a Scotchman, whose name cannot be recorded without attaching to it as high an encomium as a passionate attachment to natural science, manifested in a thousand instances, of personal labour and hazardous adventure, can deserve. Other writers, among whom we may mention Ord, Bonaparte, and Audubon, have meritoriously followed in his train; and from them we shall gather our brief notices of the principal birds of the United States.

We begin with the birds of prey. Vultures of several species are common. One called the turkey buzzard is remarked for a habit of repelling an assailant by vomiting matter intolerably offensive. They eat so immoderately, that frequently they are incapable of rising, and may be caught without much difficulty; but few that are acquainted with them will have the temerity to undertake the task. A man in the state of Delaware, a few years since, observing some turkey buzzards regaling themselves upon the carcass of a horse, which was in a highly putrid state, conceived the design of making a captive of one, to take home for the amusement of his children. He cautiously approached, and, springing upon the unsuspecting group, grasped a fine plump fellow in his arms, and was bearing off his prize in triumph, when, lo! the indignant vulture disgorged such a torrent of filth in the face of our hero, that it produced all the effects of the most powerful emetic, and for ever cured him of his inclination for turkey buzzards.— The habits of the black vulture, or carrion crow, which is not found higher than North Carolina, are singular. In the towns and villages of the southern states, the carrion crows may be seen either sauntering about the streets, or sunning themselves on the roofs of the houses, and the fences; or, if the weather be cold, cowering round the tops of the chimneys, to enjoy the benefit of the heat, which to them is a great pleasure. They are protected either by law or by usage, and may be said to be completely domesticated, being as common as the domestic poultry, and equally familiar. The inhabitants generally are disgusted with their filthy, voracious habits; but, notwithstanding, being viewed as conducive to the removal of the dead animal matter, which, if permitted to putrify during the hot season, would render the atmosphere impure, they have a respect paid them as scavengers, whose labours are subservient to the public good. It sometimes happens, that, after having gorged themselves, these birds vomit down the chimneys, which must be intolerably disgusting, and can scarcely fail to provoke the ill-will of those whose hospitality is thus required.

For strength, spirit, and activity, the ring-tailed eagle ranks among the first of its tribe. A still more interesting species is the bald eagle, which, as he is one of the most beautiful of his tribe in this part of the world, and the adopted emblem of the republic, is entitled to particular notice. The celebrated cataract of Niagara is a noted place of resort for the bald eagle, as well on account of the fish procured there, as for the numerous carcasses of squirrels, deer, bears, and various other animals, which, in their attempts

to cross the river above the falls, have been drawn into the current, and precipitated down that tremendous gulf, where, among the rocks that bound the rapids below, they furnish a rich repast for various predaceous birds. He is also found generally in the vicinity of the sea, and along the shores and cliffs of the lakes and large rivers. Formed by nature for braving the severest cold; feeding equally on the produce of the sea, and of the land; possessing powers of flight capable of outstripping even the tempests themselves; unawed by any thing but man; and, from the ethereal heights to which he soars, looking abroad, at one glance, on an immeasurable expanse of forests, fields, lakes, and ocean, deep below him, he appears indifferent to the little localities affected by change of seasons; as, in a few minutes, he can pass from summer to winter, from the lower to the higher regions of the atmosphere, the abode of eternal cold; and from thence descend, at will, to the torrid or the arctic regions of the earth. He is, therefore, found at all seasons, in the countries he inhabits; but he prefers such places as have been mentioned above, from the great partiality he has for fish. In procuring these, he displays in a very singular manner the genius and energy of his character, which is fierce, contemplative, daring, and tyrannical; attributes not exerted but on particular occasions, but, when put forth, overpowering all opposition. Elevated on the high dead limb of some gigantic tree that commands a wide view of the neighbouring shore and ocean, he seems calmly to contemplate the motions of the various feathered tribes that pursue their busy avocations below: the snow-white gulls slowly winnowing the air; the busy *tringæ* coursing along the sands; trains of ducks streaming over the surface; silent and watchful cranes, intent and wading; clamorous crows; and all the winged multitudes that subsist by the bounty of this vast liquid magazine of nature. High over all these appears one, whose action instantly arrests his whole attention. By his wide curvature of wing, and sudden suspension in air, he knows him to be the fish-hawk, settling over some devoted victim of the deep. His eye kindles at the sight, and, balancing himself, with half-opened wings, on the branch, he watches the result. Down, rapid as an arrow, descends the distant object of his attention, the roar of its wings reaching the ear as it disappears in the deep, making the surges foam around. At this moment, the eager looks of the eagle are all ardour; and, levelling his neck for flight, he sees the fish-hawk once more emerge, struggling with his prey, and mounting in the air with screams of exultation. These are the signal for our hero, who,

launching into the air, instantly gives chase, and soon gains on the fish-hawk; each exerts his utmost strength to mount above the other, displaying in these rencontres the most elegant and sublime aerial evolutions. The unencumbered eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops his fish; the eagle, poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods. These predatory attacks and defensive manœuvres of the eagle and the fish-hawk are matters of daily observation along the whole of the seaboard, from Georgia to New England, and frequently excite great interest in the spectators. Sympathy, however, on this as on most other occasions, generally sides with the honest and laborious sufferer, in opposition to the attacks of power, injustice, and rapacity, qualities for which our hero is so generally notorious, and which, in his superior, man, are certainly detestable. As for the feelings of the poor fish, they seem, altogether out of the question. When driven, as the eagle sometimes is, by the combined courage and perseverance of the fish-hawks from their neighbourhood, and forced to hunt for himself, he retires more inland, in search of young pigs, of which he destroys great numbers. In the lower parts of Virginia and North Carolina, where the inhabitants raise vast herds of those animals, complaints of this kind are very general against him. He also destroys young lambs, in the early part of spring; and will sometimes attack old sickly sheep, aiming furiously at their eyes. This eagle is said to live to the great age, of sixty, eighty or even a hundred years. A still finer bird, the sea-eagle, which dives for its own prey, has also been discovered in the United States, though it is not common. An account of it is given by Audubon, who has called it the bird of Washington.*

The fish-hawk is migratory, arriving on the coasts of New York and New Jersey about the twenty-first of March, and retiring to the south about the twenty-second of September. This formidable, vigorous-winged, and well-known bird, subsists altogether on the finny tribes that swarm in the bays, creeks, and rivers; procuring his prey by his own active skill and industry, and seeming no further dependent on the land than as a mere resting place, or, in the usual season, a spot of deposit for his nest, eggs, and young. On the arrival of these birds in the north-

* Ornithological Biography.

ern parts of the United States, in March, they sometimes find the bays and ponds frozen, and experience a difficulty in procuring fish for many days; yet there is no instance on record of their attacking birds, or inferior land animals, with intent to feed on them; though their great strength of flight, as well as of feet and claws, would seem to render this no difficult matter: but they no sooner arrive, than they wage war on the bald eagles, as against a horde of robbers and banditti; sometimes succeeding, by force of numbers and perseverance, in driving them from their haunts, but seldom or never attacking them in single combat. The flight of the fish-hawk, his manœuvres while in search of fish, and his manner of seizing his prey, are deserving of particular notice. In leaving the nest, he usually flies direct until he comes to the sea; he then sails round in easy curving lines, turning sometimes in the air as on a pivot, apparently without the least exertion, rarely moving the wings, his legs extended in a straight line behind, and his remarkable length, and curvature or bend of wing, distinguishing him from all other hawks. The height at which he thus elegantly glides is various, from one hundred to one hundred and fifty and two hundred feet, sometimes much higher, all the while calmly reconnoitring the face of the deep below. Suddenly he is seen to check his course, as if struck by a particular object, which he seems to survey for a few moments with such steadiness that he appears fixed in air, flapping his wings. This object, however, he abandons, or rather the fish he had in his eye has disappeared, and he is seen sailing round as before. Now his attention is again arrested, and he descends with great rapidity; but ere he reaches the surface, shoots off on another course, as if ashamed that a second victim had escaped him. He now flies at a short height above the surface, and by a zig-zag descent, and without seeming to dip his feet in the water, seizes a fish, which, after carrying a short distance, he perhaps drops, or yields up to the bald eagle, and again ascends, by easy spiral circles, to the higher regions of the air, where he glides about in all the ease and majesty of his species. At once, from this aerial height, he descends like a perpendicular torrent, plunging into the sea with a loud rushing sound, and with the certainty of a rifle. In a few moments he emerges, bearing in his claws his struggling prey, which he always carries head foremost, and, having risen a few feet above the surface, shakes himself as a water-spaniel would do, and directs his heavy and laborious course directly for the land; and if the wind blow hard, and his nest lie in the quarter from whence it comes, it is amusing to ob-

serve with what judgment and exertion he beats to windward, not in a direct line, that is, in the wind's eye, but making several successive tacks to gain his purpose. His flight will appear the more striking, when we consider the size of the fish which he sometimes bears along. A shad was taken from a fish-hawk near Great Egg Harbour, on which he had begun to regale himself, and had already eaten a considerable portion of it; the remainder weighed six pounds. Another fish-hawk was passing Mr. Beasley's, at the same place, with a large flounder in his grasp, which struggled and shook him so, that he dropped it on the shore; the flounder was picked up, and served the whole family for dinner. It is singular that the hawk never descends to pick up a fish which he happens to drop, either on the land or on the water. In his fishing pursuits, he sometimes mistakes his mark, or overrates his strength, by striking fish too large and powerful for him to manage: in this case he is dragged under the water, and though he sometimes succeeds in extricating himself, after being taken three or four times down, yet oftener both parties perish. The bodies of sturgeon, and of several other large fish, with a fish-hawk fast grappled in them, have at different times been found dead on the shore, cast up by the waves.

The peregrine falcon, or, according to Wilson, the great-footed hawk, is in the United States the terror of the waterfowl. When they perceive the approach of their enemy, a universal alarm pervades their ranks; even man himself, with his engine of destruction, is not more terrible, but the effect is different. When the latter is beheld, the whole atmosphere is enlivened with the whistling of wings; when the former is recognised, not a duck is to be seen in the air; they all speed to the water, and there remain till the hawk has passed them, diving the moment he comes near them. The ducks which are struck down by this bird have their backs lacerated from the rump to the neck; a proof that he strikes with his talons, and not, as vulgarly supposed, with his breast. The Mississippi kite is one of the numerous species peculiar to the western continent, feeding chiefly on insects, with an occasional repast on lizards, snakes, and small birds. Wilson gives the following account of one shot by himself: "This hawk, which proved to be a male, though wounded, and precipitated from a vast height, exhibited in his distress symptoms of great strength, and an almost unconquerable spirit. I no sooner approached to pick him up, than he instantly gave battle, striking rapidly with his claws, wheeling round and round as he lay partly on his rump, and

defending himself with great vigilance and dexterity, while his dark red eye sparkled with rage. Notwithstanding all my caution in seizing him to carry him home, he struck his hind claw into my hand with such force as to penetrate to the bone. Anxious to preserve his life, I endeavoured gently to disengage it; but this made him only contract it the more powerfully, causing such pain that I had no other alternative but that of cutting the sinew of his heel with my penknife. The whole time he lived with me, he seemed to watch every movement I made, erecting the feathers behind his head, and eyeing me with savage fierceness, and considering me, no doubt, as the greater savage of the two."

The republic is visited by the snow owl, the great winged hunter, which inhabits the coldest and most dreary regions of the northern hemisphere on both continents. The great horned owl is found in almost every quarter of the United States. His favourite residence, however, is in the dark solitudes of deep swamps, covered with a growth of gigantic timber; and here, as soon as evening draws on, and mankind retire to rest, he sends forth such sounds as seem scarcely to belong to this world, startling the solitary pilgrim as he slumbers by his forest fire, and

"Making night hideous."

"Along the mountainous shores of the Ohio, and amidst the deep forests of Indiana, alone, and reposing in the woods, this ghostly watchman has frequently warned me," says Wilson, "of the approach of morning, and amused me with his singular exclamations, sometimes sweeping down and around my fire, uttering a loud and sudden *Waugh O! Waugh O!* sufficient to have alarmed a whole garrison. He has other nocturnal solos no less melodious, one of which very strikingly resembles the half-suppressed screams of a person suffocating, or throttled, and can not fail of being exceedingly entertaining to a lonely benighted traveller, in the midst of an Indian wilderness. It preys on young rabbits, squirrels, rats, mice, partridges, and small birds of various kinds. It has been often known to prowl about the farm-house, and carry off chickens from roost. A very large one, having been wing-broken while on a foraging excursion of this kind, was kept about the house for several days, and at length disappeared, no one knew how; almost every day after this hens and chickens also disappeared, one by one, in an unaccountable manner, till, in eight or ten days, very few were left remaining. The fox, the minx, and the weasel, were alternately the reputed authors of this mischief,

until one morning the old lady rising before day to bake, in passing towards the oven surprised her late prisoner, the owl, regaling himself on the body of a newly-killed hen. The thief instantly made for his hole under the house, from whence the enraged matron soon dislodged him with the brush-handle, and without mercy dispatched him. In this snug retreat were found the greater part of the feathers, and many large fragments of her whole family of chickens." The barn owl, though so common in Europe, is rare in the United States, and is only found there during very severe winters; this may possibly be owing to the want of those favourite recesses in this part of the world, which it so much affects in the eastern continent.

The most singular bird of this species, and one whose habits are strikingly at variance with the general characteristics of the family, is the burrowing owl. He is found in the trans-mississippian territories of the United States, residing exclusively in the villages of the marmot, or prairie dog, whose excavations are so commodious as to render it unnecessary that our bird should dig for himself, as he is said to do in other parts of the world, where no burrowing animals exist. In all these prairie dog villages the burrowing owl is seen moving briskly about, or else in small flocks scattered among the mounds; and, at a distance, it may be mistaken for the marmot itself when sitting erect. They manifest but little timidity, and allow themselves to be approached sufficiently close for shooting; but, if alarmed, some or all of them soar away, and settle down again at a short distance; if further disturbed, their flight is continued until they are no longer in view, or they descend into their dwellings, whence they are difficult to dislodge. Mr. Say uniformly noticed the ruinous condition of the burrows tenanted by the owl, which had frequently fallen in, and their sides channelled by the rains; while the neat and well-preserved mansion actually occupied by the marmot showed the active care of a skilful and industrious owner. We have no evidence that the owl and marmot habitually resort to one burrow; yet we are assured, by Pike and others, that a common danger often drives them into the same excavation, where lizards and rattlesnakes also enter for concealment and safety.

Of 168 kinds of parrots enumerated by European writers as inhabiting the various regions of the globe, the Carolina parrot is the only species found native within the territory of the United States. This bird inhabits the interior of Louisiana, and the shores of the Mississippi and Ohio, and their tributary waters.

even beyond the Illinois river, to the neighbourhood of Lake Michigan in lat. 42 degrees north; and, contrary to the generally received opinion, is chiefly resident in all these places. Eastward of the Apalachian, it is seldom seen further north than the state of Maryland, though straggling parties have been occasionally observed among the valleys of the Juniata, and, according to some, even twenty-five miles to the north-west of Albany, in the state of New York. "At Big-bone Lick," says Wilson, "thirty miles from the mouth of Kentucky river, I saw them in great numbers. They came screaming through the woods in the morning, about an hour after sunrise, to drink the salt water, of which they, as well as the pigeons, are remarkably fond. When they alighted on the ground, it appeared at a distance as if covered with a carpet of the richest green, orange, and yellow; they afterwards settled in one body on a neighbouring tree, which stood detached from any other, covering almost every twig of it; and the sun, shining strongly on their gay and glossy plumage, produced a very beautiful and splendid appearance. Here I had an opportunity of observing some very particular traits of their character. Having shot down a number, some of which were only wounded, the whole flock swept repeatedly around their prostrate companions, and again settled on a low tree, within twenty yards of the spot where I stood. At each successive discharge, though showers of them fell, yet the affection of the survivors seemed rather to increase; for, after a few circuits round the place, they again alighted near me, looking down on their slaughtered companions with such manifest symptoms of sympathy and concern as entirely disarmed me." We are tempted to give a further extract, though somewhat long, from Wilson's account, not merely for the sake of exhibiting the habits of the bird, but because it shows something of the manner in which this enthusiastic naturalist prosecuted his inquiries. "Anxious to try the effects of education on one of those which I procured at Big-bone Lick, and which was but slightly wounded in the wing, I fixed up a place for it in the stern of my boat, and presented it with some cockle burrs, which it freely fed on in less than an hour after being on board. The intermediate time between eating and sleeping was occupied in gnawing the sticks that formed its place of confinement, in order to make a practicable breach, which it repeatedly effected. When I abandoned the river and travelled by land, I wrapped it up closely in a silk handkerchief, tying it tightly round, and carried it in my pocket. When I stopped for refreshment I unbound my prisoner, and gave it its allowance, which it ge-

nerally dispatched with great dexterity, unhusking the seeds from the burr in a twinkling; in doing which it always employed its left foot to hold the burr, as did several others that I kept for some time. I began to think that this might be peculiar to the whole tribe, and that they all were, if I may use the expression, left-footed; but by shooting a number afterwards while engaged in eating mulberries, I found sometimes the left, sometimes the right foot stained with the fruit, the other always clean: from which, and the constant practice of those I kept, it appears, that, like the human species in the use of their hands, they do not prefer one or the other indiscriminately, but are either left or right-footed. But to return to my prisoner; in recommitting it to 'du-rance vile' we generally had a quarrel, during which it frequently paid me in kind for the wound I had inflicted and for depriving it of liberty, by cutting and almost disabling several of my fingers with its sharp and powerful bill. The path through the wilderness between Nashville and Natchez is in some places bad beyond description. There are dangerous creeks to swim, miles of morass to struggle through, rendered almost as gloomy as night by a prodigious growth of timber, and an underwood of canes and other evergreens; while the descent into these sluggish streams is often ten or fifteen feet perpendicular, into a bed of deep clay. In some of the worst of these places, where I had, as it were, to fight my way through, the paroquet frequently escaped from my pocket, obliging me to dismount and pursue it, through the worst of the morass, before I could regain it. On these occasions I was several times tempted to abandon it; but I persisted in bringing it along. When at night I encamped in the woods, I placed it on the baggage beside me, where it usually sat, with great composure, dozing and gazing at the fire till morning. In this manner I carried it upwards of a thousand miles in my pocket, where it was exposed all day to the jolting of the horse, but regularly liberated at meal times and in the evening, at which it always expressed great satisfaction. In passing through the Chickasaw and Choctaw nations, the Indians, wherever I stopped to feed, collected around me, men, women, and children, laughing, and seeming wonderfully amused with the novelty of my companion. The Chickasaws called it in their language *kelinky*; but when they heard me call it Poll, they soon repeated the name; and wherever I chanced to stop among these people, we soon became familiar with each other through the medium of Poll. On arriving at Mr. Dunbar's, below Natchez, I procured a cage, and placed it under the piazza; where

by its call, it soon attracted the passing flocks, such is the attachment they have for each other. Numerous parties frequently alighted on the trees immediately above, keeping up a constant conversation with the prisoner. One of these I wounded slightly in the wing, and the pleasure Poll expressed on meeting with this new companion was really amusing. She crept close up to it as it hung on the side of the cage, chattering to it in a low tone of voice, as if sympathizing in its misfortune, scratched about its head and neck with her bill; and both, at night, nestled as close as possible to each other, sometimes Poll's head being thrust among the plumage of the other. On the death of this companion, she appeared restless and inconsolable for several days. On reaching New Orleans, I placed a looking-glass beside the place where she usually sat, and the instant she perceived her image, all her former fondness seemed to return, so that she could scarcely absent herself from it a moment. It was evident that she was completely deceived. Always, when evening drew on, and often during the day, she laid her head close to that of the image in the glass, and began to doze with great composure and satisfaction. In this short space she had learnt to know her name, to answer and come when called on, to climb up my clothes, to sit on my shoulder, and to eat from my mouth. I took her with me to sea, determined to persevere in her education; but, destined to another fate, poor Poll, having one morning, about daybreak, wrought her way through the cage while I was asleep, instantly flew overboard, and perished in the Gulf of Mexico."

A stranger who visits the United States for the purpose of examining their natural productions, and passes through the woods in the month of May or June, will sometimes hear, as he traverses the borders of deep, retired, high-timbered hollows, an uncouth guttural sound, or note, resembling the syllables *kowe, kowe, kowe, kowe, kowe*, beginning slowly, but ending so rapidly, that the notes seem to run into each other, and *vice versa*: he will hear this frequently, without being able to discover the bird or animal from which it proceeds, as it is both shy and solitary, seeking always the thickest foliage for concealment. This is the yellow-billed cuckoo. From the imitative sound of its note, it is known in many parts by the name of the cow-bird; it is also called in Virginia, the rain-crow, being observed to be most clamorous immediately before rain. Unlike the European cuckoo, the bird now before us builds its own nest, hatches its own eggs, and rears its own young; and, in conjugal and parental affection,

seems nowise behind any of its neighbours of the grove.

The woodpeckers constitute a large and interesting class of American birds. The ivory-billed woodpecker is a majestic and formidable species, which, in strength and magnitude, stands at the head of the whole class of woodpeckers hitherto discovered. He may be called the king or chief of his tribe; and nature seems to have designed him a distinguished characteristic in the superb carmine crest, and bill of polished ivory, with which she has ornamented him. His eye is brilliant and daring; and his whole frame admirably adapted for his mode of life, and method of procuring subsistence. His manners have also a dignity in them superior to the common herd of woodpeckers, to whom trees, shrubberies, orchards, rails, fence-posts, and old prostrate logs, are alike interesting in their humble and indefatigable search for prey; but the royal hunter now before us scorns the humility of such situations, and seeks the most towering trees of the forest, seeming particularly attached to those prodigious cypress swamps, whose crowded giant sons stretch their bare and blasted or moss-hung arms midway to the skies. In these almost inaccessible recesses, amid ruinous piles of impending timber, his trumpet-like note and loud strokes resound through the solitary savage wilds, of which he seems the sole lord and inhabitant. Wherever he frequents, he leaves numerous monuments of his industry behind him. We there see enormous pine-trees with cart-loads of bark lying around their roots, and chips of the trunk itself in such quantities as to suggest the idea that half a dozen axe-men had been at work there for the whole morning. The body of the tree is also disfigured with such numerous and large excavations, that one can hardly conceive it possible for the whole to be the work of a woodpecker. With such strength, and an apparatus so powerful, what havoc might he not commit, if numerous, on the most useful of the forest trees; and yet, with all these appearances, and much of vulgar prejudice against him, it may fairly be questioned whether he is at all injurious, or rather, whether his exertions do not contribute most powerfully to the protection of the timber. Examine closely the tree where he has been at work, and you will soon perceive, that it is neither from motives of mischief nor amusement that he slices off the bark, or digs his way into the trunk. For the sound and healthy tree is the last object of his attention. The diseased, infected with insects, and hastening to putrefaction, are his favourites; there the deadly crawling enemy have formed a lodgement between the bark and tender

wood, to drink up the very vital element of the tree. It is the ravages of these vermin which the intelligent proprietor of the forest deplores, as the sole perpetrators of the destruction of his timber. Would it be believed that the larvæ of an insect, or fly, no larger than a grain of rice, should silently, and in one season, destroy some thousand acres of pine trees, many of them from two to three feet in diameter, and a hundred and fifty feet high? Yet whoever passes along the high road from Georgetown to Charleston, in South Carolina, about twenty miles from the former place, can have striking and melancholy proofs of this fact; and in some places the whole woods, as far as you can see around you, are dead, stripped of the bark, their wintry-looking arms and bare trunks bleaching in the sun, and tumbling in ruins before every blast, presenting a frightful picture of desolation. And yet ignorance and prejudice, it seems, persist in directing their indignation against the bird now before us, the constant and mortal enemy of these very vermin; as if the hand that probed the wound to extract its cause, should be equally detested with that which inflicted it, or as if the thief-catcher should be confounded with the thief. "Until some effectual preventive or more complete mode of destruction can be devised against these insects and their larvæ," says Wilson, "I would humbly suggest the propriety of protecting, and receiving with proper feelings of gratitude, the services of this and the whole tribe of wood peckers, letting the odium of guilt fall to its proper owners."

The same author furnishes us with the following account of an ivory-billed woodpecker which he shot: "Having wounded it slightly in the wing, on being caught it uttered a loudly reiterated and most piteous note, exactly resembling the violent crying of a young child, which terrified my horse so as nearly to have cost me my life. It was distressing to hear it. I carried it with me in the chair, under cover, to Wilmington. In passing through the streets its affecting cries surprised every one within hearing, particularly the females, who hurried to the doors and windows with looks of alarm and anxiety. I drove on, and on arriving at the piazza of the hotel where I intended to put up, the landlord came forward, and a number of other persons who happened to be there, all equally alarmed at what they heard; and their concern was greatly increased by my asking whether he could furnish me with accommodations for myself and my baby. The man looked blank and foolish, while the others stared with still greater astonishment. After diverting myself for a minute or two at their expense, I drew my woodpecker from

under the cover, and a general laugh took place. I took him up stairs, and locked him up in my room, while I went to see my horse taken care of. In less than an hour I returned, and, on opening the door, he set up the same distressing shout, which now appeared to proceed from grief that he had been discovered in his attempts at escape. He had mounted along the side of the window, nearly as high as the ceiling, a little below which he had begun to break through. The bed was covered with large pieces of plaster, the lath was exposed for at least fifteen inches square, and a hole, large enough to admit the fist, opened to the weather-boards; so that in less than another hour he would certainly have succeeded in making his way through. I now tied a string round his leg, and, fastening it to the table, again left him. I wished to preserve his life, and had gone off in search of suitable food for him. As I reascended the stairs, I heard him again hard at work, and, on entering, had the mortification to perceive that he had almost entirely ruined the mahogany table to which he was fastened, and on which he had wreaked his whole vengeance. While engaged in taking a drawing, he cut me severely in several places, and on the whole displayed such a noble and unconquerable spirit, that I was frequently tempted to restore him to his native woods. He lived with me nearly three days, but refused all sustenance, and I witnessed his death with regret." The ivory-billed woodpecker is seldom seen above Virginia; the pileated woodpecker, next in size, is the northern chief of his tribe.

There is perhaps no bird in North America more universally known than the red-headed woodpecker. His tricoloured plumage, red, white, and black, glossed with steel blue, is so striking and characteristic, and his predatory habits in the orchards and corn-fields, added to his numbers and fondness for hovering along the fences, so very notorious, that almost every child is acquainted with him. "In the immediate neighbourhood of our large cities," says Wilson, "where the old timber is chiefly cut down, he is not so frequently found; and yet, at this period, June, 1808, I know of several of their nests within the boundaries of the city of Philadelphia. Towards the mountains, particularly in the vicinity of creeks and rivers, these birds are extremely abundant, especially in the latter end of summer. Wherever you travel in the interior, at that season, you hear them screaming from the adjoining woods, rattling on the dead limbs of trees, or on the fences, where they are perpetually seen flitting from stake to stake, on the road side before you. Wherever there is a tree of the wild cherry covered with ripe fruit, there you see

them busy among the branches; and in passing orchards, you may easily know where to find the earliest, sweetest apples, by observing those trees, on or near which the red-headed woodpecker is skulking, for he is so excellent a connoisseur in fruit, that wherever an apple or pear tree is found broached by him, it is sure to be among the ripest and best flavoured: when alarmed, he seizes a capital one by striking his open bill deep into it, and bears it off to the woods." When the Indian corn is in its rich, succulent, milky state, he attacks it with great eagerness, opening a passage through the numerous folds of the husk, and feeding on it with voracity. His favourite retreats are among the girdled, or deadened timber, so common in corn-fields in the back settlements, whence he sallies out to make his depredations. He is fond of the ripe berries of the sour gum, and pays pretty regular visits to the cherry trees when loaded with fruit; and towards autumn he often approaches the barn or farm-house, and raps on the shingles and weather boards. He is of a gay and frolicsome disposition; and half a dozen of the fraternity are frequently seen diving and vociferating around the high dead limbs of some large tree, pursuing and playing with each other, and amusing the passengers with their gambols.

On account of the vicious traits in their character, a war of extermination has been waged against these birds, and even the legislatures of some provinces, in former times, offered premiums to the amount of twopence per head for their destruction; yet Wilson, whose generous and simple-hearted advocacy for the feathered race forms one of the principal charms of his book, thus reasonably pleads their cause: "Though this bird occasionally regales himself on fruit, yet his natural and most usual food is insects, particularly those numerous and destructive species that penetrate the bark and body of the tree to deposit their eggs and larvæ, the latter of which are well known to make immense havoc. He searches for them with a dexterity and intelligence, I may safely say, more than human; he perceives, by the exterior appearance of the bark where they lurk below; when he is dubious, he rattles vehemently on the outside with his bill, and his acute ear distinguishes the terrified vermin shrinking within to their inmost retreats, where his pointed and barbed tongue soon reaches them. The masses of bugs, caterpillars, and other larvæ, which I have taken from the stomachs of these birds, have often surprised me. These larvæ, it should be remembered, feed not only on the buds, leaves, and blossoms, but on the very vegetable life of the tree, the albumen, or newly-

forming bark and wood; the consequence is, that whole branches and whole trees decay under the silent ravages of these destructive vermin; witness the late destruction of many hundred acres of pine trees, in the north-eastern parts of South Carolina, and the thousands of peach trees that yearly decay from the same cause. Will any one say, that taking half a dozen or half a hundred apples from a tree is equally ruinous with cutting it down? Or, that the services of a useful animal should not be rewarded with a small portion of that which it has contributed to preserve? We are told, in the benevolent language of the scriptures, not to muzzle the mouth of the ox that treadeth out the corn; and why should not the same generous liberality be extended to this useful family of birds, which forms so powerful a phalanx against the inroads of many millions of destructive vermin?"

The kingfisher is a general inhabitant of the banks and shores of all the fresh-water rivers, from Hudson's Bay to Mexico, and is the only species of its tribe found within the United States. It is as universally known as its elegant little brother, the common kingfisher of Europe, is in Britain. Like the love-lorn swains of whom poets tell us, he delights in murmuring streams, and falling waters; not, however, merely that they may sooth his ear, but for a gratification somewhat more substantial. Amidst the roar of the cataract, or over the foam of a torrent, he sits perched upon an overhanging bough, glancing his piercing eye in every direction below for his scaly prey, which, with a sudden circular plunge, he sweeps from their native element, and swallows in an instant. His voice, which is not unlike the twirling of a watchman's rattle, is naturally loud, harsh, and abrupt, but it is softened by the sound of the brawling streams and cascades among which he generally rambles. He courses along the windings of the brook or river at a small height above the surface, sometimes suspending himself by the rapid action of his wings, like certain species of hawks, ready to pounce on the fry below; now and then settling on an old dead overhanging limb to reconnoitre. Mill-dams are particularly visited by this feathered fisher; and the sound of his pipe is as well known to the miller, as the rattling of his own hopper. Rapid streams with high perpendicular banks, particularly if they be of a hard clayey or sandy nature, are also favourite places of resort for this bird; not only because in such places the small fish are more exposed to view, but because those steep and dry banks are the chosen situations for his nest.

Among the most beautiful of the American birds is the oriole. Almost the whole genus of orioles be-

long to America. With few exceptions, they build pensile nests; but few of them equal the Baltimore in the construction of these receptacles for their young, and in giving them convenience, warmth, and security. For these purposes he generally fixes on the high bending extremities of the branches, fastening strong strings of hemp or flax round two forked twigs, corresponding to the intended width of the nest; with the same materials, mixed with quantities of loose tow, he interweaves or fabricates a strong firm kind of cloth not unlike the substance of a hat in its raw state, forming it into a pouch of six or seven inches in depth, lining it substantially with various soft substances, well interwoven with the outward netting, and finishing with a layer of horse hair; the whole being shaded from the sun and rain by a natural pent-house, or canopy of leaves. The Baltimore inhabits North America from Canada to Mexico, and is even found as far south as Brazil. Since the streets of the American cities have been planted with that beautiful and stately tree the Lombardy poplar, these birds are constant visitors during the early part of summer; and, amidst the noise and tumult of coaches, drays, wheelbarrows, and the din of the multitude, they are heard chanting "their native wood notes wild," sometimes, too, within a few yards of an oyster-man, who stands bellowing, with the lungs of a stentor, under the shade of the same tree; so much will habit reconcile even birds to the roar of the city, and to sounds and noises, which, in other circumstances, would put a whole grove of them to flight. The orchard oriole, though partly a dependent on the industry of the farmer, is no sneaking pilferer, but an open, and truly beneficent friend. To all those countless multitudes of destructive bugs and caterpillars that infest the fruit trees in spring and summer, preying on the leaves, blossoms, and embryo of the fruit, he is a deadly enemy; devouring them wherever he can find them, and destroying, on an average, some hundreds of them every day, without offering the slightest injury to the fruit, however much it may stand in his way. "I have witnessed instances," says Wilson, "where the entrance to his nest was more than half closed up by a cluster of apples, which he could have easily demolished in half a minute; but, as if holding the property of his patron sacred, or considering it as a natural bulwark to his own, he slid out and in with the greatest gentleness and caution." Nor is the gayety of his song one of his least recommendations. Being an exceedingly active, sprightly, and restless bird, he is on the ground—on the trees—flying and carolling in his hurried manner, in almost one and the same instant. His

notes are shrill and lively, but uttered with such rapidity and seeming confusion, that the ear is unable to follow them distinctly; between these, he has a single note, which is agreeable and interesting. Wherever he is protected, he shows his confidence and gratitude by his numbers and familiarity. The orioles are birds of passage, spending the summer only in the northern parts of the United States.

The red-winged starlings, though generally migratory in the states north of Maryland, are found during winter in immense flocks, sometimes associated with the purple grackles, and often by themselves, through the lower parts of Virginia, both Carolinas, Georgia and Louisiana, particularly near the sea coast, and in the vicinity of large rice and corn fields. "In the months of January and February," says the writer above quoted, "while passing through the former of these countries, I was frequently entertained with the aerial evolutions of these great bodies of starlings. Sometimes they appeared driving about like an enormous black cloud carried before the wind, varying its shape every moment; sometimes suddenly rising from the fields around me with a noise like thunder; while the glittering of innumerable wings of the brightest vermilion amid the black cloud they formed, produced on these occasions a very striking and splendid effect. Then descending like a torrent, and covering the branches of some detached grove or clump of trees, the whole congregated multitude commenced one general concert or chorus, which I have plainly distinguished at the distance of more than two miles; and which, when listened to at the distance of about a quarter of a mile, with a slight breeze of wind to swell and soften the flow of its cadences, was to me grand, and even sublime." The whole season of winter, which, with most birds, is passed in struggling to sustain life in silent melancholy, is with the red-wings one continued carnival. The profuse gleanings of the old rice, corn, and buckwheat fields, supply them with abundant food, at once ready and nutritious; and the intermediate time is spent either in aerial manœuvres, or in grand vocal performances, as if solicitous to supply the absence of all the tuneful summer tribes, and to cheer the dejected face of nature with their whole combined powers of harmony.

In summer these birds are very mischievous. Having migrated to the northward in the spring, before the beginning of September the flocks have become numerous and formidable; and the young ears of maize, or Indian corn, being then in their soft, succulent, milky state, present a temptation that cannot be resisted. Reinforced by numerous and daily flocks

from all parts of the interior, they pour down on the low countries in prodigious multitudes. Here they are seen, like vast clouds, wheeling and driving over the meadows and devoted corn fields, darkening the air with their numbers. Then commences the work of destruction on the corn, the husks of which, though composed of numerous envelopments of closely wrapt leaves, are soon completely or partially torn off, while from all quarters myriads continue to pour down like a tempest, blackening half an acre at a time: if not disturbed, they repeat their depredations till little remains but the cob and the shrivelled skins of the grain; and what little is left of the tender ear, being exposed to the rains and weather, is generally much injured. All the attacks and havoc made at this time among them by the gun and by the hawks, several species of which are their constant attendants, have little effect on the remainder. When the hawks make a sweep among them, they suddenly open on all sides, but rarely in time to disappoint them of their victims; and, though repeatedly fired at with mortal effect, they only remove from one field to an adjoining one, or to another quarter of the same enclosure. From dawn to nearly sunset, this open and daring devastation is carried on under the eye of the proprietor; and a farmer, who has any considerable extent of corn, would require half a dozen men at least, with guns, to guard it; and even then, all their vigilance and activity would not prevent a good tithe of it from becoming the prey of the blackbirds. The Indians, who usually plant their corn in a common field, keep all the young boys of the village all day patrolling round and among it; and each being furnished with a bow and arrows, with which they are very expert, they generally contrive to destroy great numbers of them. For this bird, though the notorious corn-thief of the United States, our humane author again puts in a plea, on the ground of the insects and larvæ destroyed by them, which he calculates at no less than sixteen thousand two hundred millions in the space of four months. A similar character and apology may be attached to the rice-bunting and the purple grackle.

The cow-bunting, or cow-pen finch, like the cuckoo of Europe, has the habit of dropping her eggs into the nests of other birds. The following account is given by Dr. Potter, of Baltimore:—"I once had an opportunity of witnessing a scene of this sort, which I cannot forbear to relate. Seeing a female prying into a bunch of bushes in search of a nest, I determined to see the result, if practicable; and, knowing how easily they are disconcerted by the near approach of man, I mounted my horse, and pro-

ceeded slowly, sometimes seeing and sometimes losing sight of her, till I had travelled nearly two miles along the margin of a creek. She entered every thick place, prying with the strictest scrutiny into places where the small birds usually build, and at last darted suddenly into a thick copse of alders and briers, where she remained five or six minutes, when she returned, soaring above the under-wood, and returned to the company she had left feeding in the field. Upon entering the covert, I found the nest of a yellow-throat, with an egg of each. The deportment of the yellow-throat on this occasion is not to be omitted. She returned while I waited near the spot, and darted into her nest, but quitted it immediately, and perched upon a bough near the place, remained a minute or two, and entered it again, returned, and disappeared. In ten minutes she returned with the male. They chattered with great agitation for half an hour, seeming to participate in the affront, and then left the place. I believe all the birds thus intruded on manifest more or less concern at finding the egg of a stranger in their own nests. Among these the sparrow is particularly punctilious; for she sometimes chirps her complaints for a day or two, and often deserts the premises altogether, even after she has deposited one or more eggs." The most remarkable circumstance connected with this habit is, that the young of the cow-bird is hatched before those of the proprietor of the nest, whose eggs, in fact, are never hatched at all, but pushed out of the nest, and in such a manner that no person can yet ascertain how it is done, or what becomes of them.

The raven is a general inhabitant of the United States, but is more common in the interior. On the lakes, and particularly in the neighbourhood of the falls of the Niagara river, they are numerous; and it is a remarkable fact, that where they abound, the common crow seldom makes its appearance. The crow is a constant attendant on agriculture, and a general inhabitant of the cultivated parts of North America. On an island in the Delaware is a very celebrated crow-roost. It is there known by the name of the Pea Patch, and is a low, flat, alluvial spot, of a few acres, elevated but a little above high-water mark, and covered with a thick growth of reeds; and it appears to be the grand rendezvous, or head-quarters, of the greater part of the crows within forty or fifty miles of the spot. It is entirely destitute of trees, the crows alighting and nestling among the reeds, which by these means are broken down and matted together. The noise created by them, both in their evening assembly and their reascension

in the morning, and the depredations they commit in the immediate neighbourhood of this great resort, are almost incredible. The strong attachment of the crows to this spot may be illustrated by the following circumstance:—Some years ago, a sudden and violent north-east storm came on during the night, and the tide, rising to an uncommon height, inundated the whole island. The darkness of the night, the suddenness and violence of the storm, and the incessant torrents of rain that fell, it is supposed, so intimidated the crows, that they did not attempt to escape, and almost all perished. Thousands of them were next day seen floating in the river; and the wind, shifting to the north-west, drove their dead bodies to the Jersey side, where for miles they blackened the whole shore. This disaster, however, seems long ago to have been repaired; for they now congregate on the Pea Patch in as immense multitudes as ever. One American species, the fish-crow, is a roving inhabitant of the sea coasts, ponds, and river-shores.

The magpie is much better known in Europe than in America, where it has not been long discovered, although it is now found to inhabit a wide extent of territory, and in great numbers. The blue jay is peculiar to North America, and is distinguished as a kind of beau among the feathered tenants of the woods, by the brilliancy of his dress; and, like most other coxcombs, makes himself still more conspicuous by his loquacity, and the oddness of his tones and gestures. It is an almost universal inhabitant of the woods, frequenting the thickest settlements as well as the deepest recesses of the forest, where his squalling voice often alarms the deer, to the disappointment and mortification of the hunter. In the charming season of spring, when every thicket pours forth harmony, the part performed by the jay always catches the ear. He appears to be among his fellow-musicians what the trumpeter is in a band, some of his notes having no distant resemblance to the tones of that instrument. These he has the faculty of changing, through a great variety of modulations, according to the particular humour in which he happens to be. When disposed for ridicule, there is scarcely a bird whose peculiarities of song he can not imitate. When engaged in the blandishments of love, his notes resemble the soft chatterings of a duck, and while he nestles among the thick branches of the cedar, are scarcely heard at a few paces distance; but he no sooner discovers your approach, than he sets up a sudden and vehement outcry, flying off, and screaming with all his might, as if he called the whole feathered tribes of the neighbourhood to witness some

outrageous usage he had received. When he hops undisturbed among the high branches of the oak and hickory, his notes become soft and musical; but his calls of the female a stranger would readily mistake for the repeated squeakings of an ungreased wheelbarrow. All these he accompanies with various nods, jerks, and other gesticulations, for which the whole tribe of jays are remarkable. They are among the most useful agents in the economy of nature for disseminating forest trees, and other ruciferous and hard-seeded vegetables on which they feed. In their autumnal foraging they drop abundance of seed; and they alone are capable, in a few years' time, of replanting all the cleared lands.

The United States present to us specimens of a singular genus of birds, formed to subsist on the superabundance of nocturnal insects, and surprisingly fitted for their mode of life. Three species only of them are found within the United States; the chuckwill's widow, the whippoorwill, and the nighthawk. The first of these is confined to those states lying south of Maryland; the other two are found generally over the union. The chuckwill's widow and the whippoorwill, have received these singular names from the similarity of their call to these words. The nighthawk is a bird of strong and vigorous flight, and of large volume of wing. It often visits the city, darting and squeaking over the streets at a great height, diving perpendicularly with a hollow sound; they are also seen sitting on chimney tops in some of the most busy parts of the city, occasionally uttering their common note. Their favourite time for flight is from two hours before sunset until dusk. At such times they seem all vivacity, darting about in the air in every direction, making frequent short sudden turnings, as if busily engaged in catching insects. Near the sea-shore, in the vicinity of extensive salt marshes, they are very numerous, skimming over the meadows, in the manner of swallows, until it is so dark that the eye can no longer follow them. The whippoorwill is a singular and very celebrated species, universally noted over the greater part of the United States for the loud reiterations of his favourite call in spring. The notes of this solitary bird, from the ideas which are naturally associated with them, seem like the voice of an old friend, and are listened to by almost all with great interest. At first they issue from some retired part of the woods, the glen, or mountain; in a few evenings, perhaps, we hear them from the adjoining coppice, the garden fence, the road before the door, and even from the roof of the dwelling-house, long after the family have retired to rest. He is now a regular acquaintance. Every morning

and evening his shrill and rapid repetitions are heard from the adjoining woods, and when two or more are calling out at the same time, as is often the case in the pairing season, and at no great distance from each other, the noise, mingling with the echoes from the mountains, is really surprising. Strangers, in parts of the country where these birds are numerous, find it almost impossible for some time to sleep; while to those long acquainted with them, the sound often serves as a lullaby.

The American chimney-swallows, of a species peculiar to that continent, arrive in the spring, and disperse themselves over the whole country wherever there are vacant chimneys in summer, sufficiently high and convenient for their accommodation. In no other situation are they observed at present to build. This circumstance naturally suggests the query, Where did these birds construct their nests before the arrival of Europeans in America, when there were no such places for their accommodation? Probably in the same situations in which they still continue to build in the remote regions of the western forests, where European improvements of this kind are scarcely to be found, namely, in the hollow of a tree, which, in some cases, has the nearest resemblance to their present choice. One of the first settlers in the state of Kentucky informs us, that he cut down a large hollow beech tree, which contained forty or fifty nests of the chimney-swallow, most of which, by the fall of the tree, or by the weather, were lying at the bottom of the hollow; but sufficient fragments remained adhering to the sides of the tree to enable him to number them. They appeared, he said, to be of many years' standing. The present site which they have chosen must, however, hold out many more advantages than the former, since we see that, in the whole thickly-settled parts of the United States, these birds have uniformly adopted this new convenience, not a single pair being observed to prefer the woods. Security from birds of prey and other animals—from storms that frequently overthrow the timber, and the numerous ready conveniences which these new situations afford, are doubtless some of the advantages. In towns it is matter of curiosity to observe that they frequently select the court-house chimney for their general place of rendezvous, as being usually more central, and less liable to interruption during the night. The summer residence of the purple martin is universally among the habitations of man; who, having no interest in his destruction, and deriving considerable advantage, as well as amusement, from his company, is generally his friend and protector. Wherever he comes, he

finds some hospitable retreat fitted up for his accommodation. Even the solitary Indian seems to have a particular respect for this bird. The Choctaws and Chickasaws cut off all the top branches from a sapling near their cabins, leaving the prongs a foot or two in length, on each of which they hang a gourd, or calabash, properly hollowed out for their convenience; and on the banks of the Mississippi, the negroes stick up long canes, with the same species of apartment fixed to their tops, in which the martins regularly breed. The barn swallow is of particularly swift and incessant flight, and Wilson gives us the following computation of the distance he may be supposed to traverse. "Let us suppose that this little bird flies, in his usual way, at the rate of one mile in a minute, which, from the many experiments I have made, I believe to be within the truth; and that he is so engaged for ten hours every day; and further, that this active life is extended to ten years, (many of our small birds being known to live much longer, even in a state of domestication,) the amount of all these, allowing three hundred and sixty-five days to a year, would give us two million one hundred and ninety thousand miles; upwards of eighty-seven times the circumference of the globe."

Of the numerous family of flycatchers, the tyrant flycatcher, or king bird, is the principal. The name king as well as tyrant has been bestowed on this bird for its extraordinary behaviour, and the authority it assumes over all others, during the time of breeding. At that season his extreme affection for his mate, and for his nest and young, makes him suspicious of every bird that happens to pass near his residence, so that he attacks without discrimination every intruder; all his turbulence, however, vanishes as soon as his young are able to shift for themselves; and he is then as mild and peaceable as any other bird. But he has a worse habit than this; one much more obnoxious to the husbandman, and often fatal to himself. He loves not the honey, but the bees; and, it is confessed, is frequently on the look-out for these little industrious insects. He plants himself on a post of the fence, or on a small tree in the garden, not far from the hives, and from thence sallies forth on them as they pass and repass, making great havoc among them. His shrill twitter, so near to the house, gives intimation to the farmer of what is going on, and the gun soon closes his career: yet, the death of every king bird is an actual loss to the farmer, by multiplying the numbers of destructive insects, and encouraging the depredations of crows, hawks, and eagles, who avoid as much as possible his immediate vicinity. The yellow-breasted chat, which belongs

to this tribe, has a singular habit of concealed vociferation. When he has once taken up his residence in a favourite situation, which is almost always in close thickets of hazel, brambles, vines, and thick underwood, he becomes very jealous of his possessions, and seems offended at the least intrusions; scolding all passengers as soon as they come within view, in a great variety of odd and uncouth monosyllables, which it is difficult to describe, but which may be readily imitated, so as to deceive the bird himself, and draw him after you for half a quarter of a mile at a time. On these occasions, his responses are constant and rapid, strongly expressive of anger and anxiety; and while the bird itself remains unseen, the voice shifts from place to place, among the bushes, as if it proceeded from a spigit. All his notes are uttered with great vehemence, in such different keys, and with such peculiar modulations of voice, as sometimes to seem at a considerable distance, and instantly as if just beside you; now on this hand, now on that; so that, from these manœuvres of ventriloquism, you are utterly at a loss to ascertain from what particular spot or quarter they proceed.

Among the many novelties which the discovery of this part of the western continent first brought into notice, we may reckon the mocking-bird, which is peculiar to the new world, and inhabits a very considerable extent of both North and South America; having been traced from the states of New England to Brazil. The plumage of the mocking-bird, though none of the homeliest, has nothing gaudy or brilliant in it; but his figure is well proportioned, and even handsome. The ease, elegance, and rapidity of his movements, the animation of his eye, and the intelligence he displays in listening and laying up lessons from almost every species of the feathered creation within his hearing, are pre-eminent. To these qualities may be added that of a voice full, strong, and musical, and capable of almost every modulation, from the clear mellow tones of the wood-thrush, to the savage scream of the bald eagle. In measure and accent, he faithfully follows his originals; in force and sweetness of expression, he greatly improves upon them. In his native groves, mounted on the top of a tall bush, or half-grown tree, in the dawn of dewy morning, while the woods are already vocal with a multitude of warblers, his admirable song rises pre-eminent over every competitor. The ear listens to his music alone, to which that of all the others seems a mere accompaniment. Neither is this strain altogether imitative. His own native notes, which are easily distinguishable by such as are well acquainted with those of our vari-

ous song-birds, are bold and full, and varied seemingly beyond all limits. His expanded wings and tail, glistening with white, and the buoyant gayety of his action, arresting the eye, as his song most irresistibly does the ear, he sweeps round with enthusiastic ecstasy, and mounts or descends as his song swells or dies away; and, as Mr. Bartram has beautifully expressed it, "he bounds aloft with the celerity of an arrow, as if to recover or recall his very soul, expired in the last elevated strain." While thus exerting himself, a bystander destitute of sight would suppose that the whole feathered tribes had assembled together, on a trial of skill, each striving to produce his utmost effect; so perfect are his imitations. He many times deceives the sportsman, and sends him in search of birds that perhaps are not within miles of him, but whose notes he exactly imitates: even birds themselves are frequently imposed on by this admirable mimic, and are decoyed by the fancied calls of their mates, or dive, with precipitation, into the depth of thickets, at the scream of what they suppose to be the sparrow-hawk. The mocking bird loses little of the power and energy of his song by confinement. The only bird in the world worthy of being compared with him, is the European night-gale.

In his account of the cat-bird, a common and well known species, Wilson says,—"in passing through the woods in summer, I have sometimes amused myself with imitating the violent chirping or squeaking of young birds, in order to observe what different species were around me,—for such sounds, at such a season, in the woods, are no less alarming to the feathered tenants of the bushes, than the cry of fire or murder in the streets is to the inhabitants of a large and populous city. On such occasions of alarm and consternation, the cat-bird is the first to make his appearance, not singly, but sometimes half a dozen at a time, flying from different quarters to the spot. At this time, those who are disposed to play with his feelings may almost throw him into fits, his emotion and agitation are so great, at the distressful cries of what he supposes to be his suffering young. Other birds are variously affected; but none show symptoms of such extreme suffering. He hurries backwards and forwards, with hanging wings and open mouth, calling out louder and faster, and actually screaming with distress, till he appears hoarse with his exertions. He attempts no offensive means; but he bewails—he implores—in the most pathetic terms with which nature has supplied him, and with an agony of feeling which is truly affecting. Every feathered neighbour within hearing hastens to the

TOPOGRAPHY OF THE UNITED STATES.

place, to learn the cause of the alarm, peeping about with looks of consternation and sympathy."

The robins are so fond of gum-berries, that wherever there is one of these trees covered with fruit and flocks of robins in the neighbourhood, the sportsman need only take his stand near it, load, take aim, and fire; one flock succeeding another, with little interruption, almost the whole day. When berries fail, they disperse themselves over the fields, and along the fences, in search of worms and other insects. Sometimes they disappear for a week or two, and return again in immense numbers; the cities then pour out their sportsmen by scores, and the markets are plentifully supplied with them at a cheap rate.

Among the numerous warblers of the United States, we can only further mention the blue bird. He is of pleasing manners and a sociable disposition. As one of the first messengers of spring, he bears his own recommendation always along with him, and meets with a hearty welcome from every body. In his motions and general character, he has a great resemblance to the robin redbreast of Britain; and, had he the brown olive of that bird, instead of his own blue, could scarcely be distinguished from him. Like him, he is known to almost every child; and shows as much confidence in man by associating with him in summer, as the other by his familiarity in winter. Few farmers neglect to provide for him, in some suitable place, a snug little summer-house, ready fitted and rent free; for which he more than repays them by the cheerfulness of his song, and the multitude of injurious insects which he daily destroys.

Several species of wren are common. The house wren, a familiar bird, is marked by a strong antipathy to cats; for, having frequent occasion to glean among the currant bushes, and other shrubs in the garden, those lurking enemies of the feathered race often prove fatal to him. "A box fixed up in the window of the room where I slept," says Wilson, "was taken possession of by a pair of wrens. Already the nest was built and two eggs laid, when one day, the window being open as well as the room-door, the female wren, venturing too far into the room to reconnoitre, was sprung upon by grimalkin, who had planted herself there for the purpose; and, before relief could be given, she was destroyed. Curious to see how the survivor would demean himself, I watched him carefully for several days. At first he sang with great vivacity for an hour or so, but becoming uneasy, went off for half an hour. On his return he chanted again as before, went to the top of the house, the stable, and the weeping willow, that she might

hear him; but seeing no appearance of her, he returned once more, visited the nest, ventured cautiously into the window, gazed about with suspicious looks, his voice sinking to a low melancholy note as he stretched his little neck about in every direction. Returning to the box, he seemed for some minutes at a loss what to do, and soon after went off, as I thought, altogether, for I saw him no more that day. Towards the afternoon of the second day he again made his appearance, accompanied with a new female, who seemed exceedingly timorous and shy, and who only after great hesitation entered the box; at this moment the little widower or bridegroom seemed as if he would warble out his very life with ecstasy of joy. After remaining about half a minute in, they both flew off, but returned in a few minutes, and instantly began to carry out the eggs, feathers, and some of the sticks, supplying the place of the two latter with materials of the same sort; and they ultimately succeeded in raising a brood of seven young, all of which escaped in safety."

The brown creepers are distributed over the whole United States; but are most numerous in the western and northern states, and particularly so in the depth of the forests, and in tracts of large-timbered woods, where they usually breed; visiting the thicker-settled parts of the country in fall and winter. The white-breasted nuthatch is common almost everywhere in the woods of North America, and may be known at a distance by the notes *quank, quank*, frequently repeated as he moves upward and downward, in spiral circles, around the body and larger branches of the tree, probing behind the thin scaly bark of the white oak, and shelling off considerable pieces of it, in his search after spiders, ants, insects, and their larvæ. The red-bellied black-capped nuthatch is particularly fond of the seeds of pine trees. You may traverse many thousand acres of oak, hickory, and chestnut woods, during winter, without meeting with a single individual; but no sooner do you enter among the pines, than, if the air be still, you have only to listen for a few moments, and their note will direct you where to find them. The brown-headed nuthatch is chiefly an inhabitant of Virginia and the southern states, and seems particularly fond of pine trees.

The humming-bird is migratory through the whole of the United States, excepting Florida. As it passes on to the northward as far as the interior of Canada, where it is seen in great numbers, wonder is excited how so feebly constructed and delicate a little creature can make its way over such extensive regions of lakes and forests, among so many enemies, all its superiors in strength and magnitude; but its very

minuteness, the rapidity of its flight, which almost eludes the eye, and that admirable instinct, reason, or whatever else it may be called, and daring courage, which heaven has implanted in its bosom, are its protectors. The humming-bird is extremely fond of tubular flowers. When arrived before a thicket of trumpet-flowers that are full-blown, he poises, or suspends himself on wing, for the space of two or three seconds, so steadily, that his wings become invisible, or only like a mist, and you can plainly distinguish the pupil of his eye looking round with great quickness and circumspection; the glossy golden green of his back and the fire of his throat, glistening in the sun, forms altogether a most interesting appearance. When he alights, which is frequently, he always prefers the small dead twigs of a tree or bush, where he dresses and arranges his plumage with great dexterity. His only note is a single chirp, not louder than that of a small cricket or grasshopper, generally uttered while passing from flower to flower, or when engaged in fights with his fellows: for, when two males meet at the same bush or flower, a battle instantly takes place; and the combatants ascend in the air, chirping, darting, and circling round each other, till the eye is no longer able to follow them. The conqueror, however, generally returns to the place, to reap the fruits of his victory. He is one of those few birds that are universally beloved; and, amidst the sweet dewy serenity of a summer's morning, his appearance among the arbours of honey-suckles, and beds of flowers, is truly interesting.

The tanagers are gaudy birds, who annually visit the republic from the torrid regions of the south. The scarlet tanager is, perhaps, the most showy. He spreads himself over the United States, and is found even in Canada. He rarely approaches the habitations of man, unless, perhaps, in the orchard, where he sometimes builds; or in the cherry trees, in search of fruit: the depth of the woods is his favourite abode. Among all the birds that inhabit our woods, there is none that strikes the eye of a stranger, or even a native, with so much brilliancy as this. Seen among the green leaves, with the light falling strongly on his plumage, he really appears beautiful. Another species, the summer red-bird, delights in a flat sandy country, covered with wood and interspersed with pine trees; and is, consequently, more numerous towards the shores of the Atlantic than in the interior. In both Carolinas, and in Georgia and Florida, they are in great plenty.

Among the numerous birds of the finch family we briefly notice a few. The indigo-bird is another of the rich-plumaged tribes, which migrate from the

south. It is numerous in all the settled parts of the middle and eastern states; in the Carolinas and Georgia it is also abundant. Its favourite haunts are about gardens, fields of deep clover, the borders of woods, and roadsides, where it is frequently seen perched on the fences. In its manners, it is extremely active and neat, and a vigorous and pretty good songster. In some lights, his plumage appears of a rich sky blue, and in others of a vivid verdigris green; so that the same bird, in passing from one place to another before your eyes, seems to undergo a total change of colour. The painted bunting is one of the most numerous of the little summer birds of Lower Louisiana, where it is universally known among the French inhabitants, and called by them "le pape," and by the Americans "the nonpareil." Its gay dress and docility of manners have procured it many admirers. The low countries of the southern states, in the vicinity of the sea, and along the borders of the large rivers, particularly among the rice plantations, are the favourite haunts of this elegant little bird. It is very commonly domesticated in the houses of the French inhabitants of New Orleans, appearing to be the most common cage bird they have. The negroes often bring them to market for sale. The cardinal grosbeak is one of the most common cage birds, and is very generally known, not only in North America, but even in Europe, numbers of them having been carried over both to France and England, in which last country they are usually called "Virginia nightingales." To this name Dr. Latham observes they are fully entitled, from the clearness and variety of their notes, which, both in a wild and domestic state, are very various and musical; many of them resemble the high notes of a fife, and are nearly as loud. The sprightly figure and gaudy plumage of the red-bird, his vivacity, strength of voice, and actual variety of note, and the little expense with which he is kept, will always make him a favourite. This species, like the mocking-bird, is more numerous to the east of the great range of the Apalachian mountains, and is found from New England to Carthage. Through the lower parts of the southern states, in the neighbourhood of settlements, they are numerous; their clear and lively notes, in the months of January and February, being almost the only music of the season. Along the roadsides and fences they are found hovering in half dozens together, associated with snow birds, and various kinds of sparrows. The crossbill is a regular inhabitant of almost all the pine forests situated north of 40°, from the beginning of September to the middle of April.

Respecting the melody of the transatlantic birds generally, Wilson makes the following observations: 'The opinion which so generally prevails in England, that the music of the groves and woods of America is far inferior to that of Europe, I, who have a thousand times listened to both, can not admit to be correct. We can not with fairness draw a comparison between the depth of the forest in America, and the cultivated fields of England; because it is a well known fact, that singing birds seldom frequent the former in any country. But let the latter places be compared with the like situations in the United States, and the superiority of song, I am fully persuaded, would justly belong to the western continent. The few of our song-birds that have visited Europe extort admiration from the best judges. 'The notes of the cardinal grosbeak,' says Latham, 'are almost equal to those of the nightingale.' Yet these notes, clear and excellent as they are, are far inferior to those of the wood thrush; and even to those of the brown thrush, or thrasher. Our inimitable mocking-bird is also acknowledged, by themselves, to be fully equal to the song of the nightingale in its whole compass. Yet these are not one tenth of the number of our singing birds. Could these people be transported to the borders of our woods and settlements in the month of May, about half an hour before sunrise, such a ravishing concert would greet their ear as they have no conception of."

The American crossbill is a regular inhabitant of almost all the pine forests situated north of 40°, from the beginning of September till the middle of April. They then appear in large flocks, feeding on the seeds of the hemlock and white pine, have a loud, sharp, and not unmusical note, chatter as they fly, alight, during the prevalence of deep snows, before the door of the hunter, and around the house, picking off the clay with which the logs are plastered, and searching in corners where any substance of a saline quality has been thrown. At such times they are so tame as only to settle on the roof of the cabin when disturbed, and in a moment afterwards descend to feed as before. They are then easily caught in traps, and will frequently permit a person to approach so near as to knock them down with a stick. On first glancing at the bill of this extraordinary bird, one is apt to pronounce it deformed and monstrous; but on attentively observing the use to which it is applied by the owner, and the dexterity with which he detaches the seeds of the pine tree from the cone and from the husks that enclose them, we are obliged to confess on this, as on many other occasions where

we have judged too hastily of the operations of nature, that no other conformation could have been so excellently adapted to the purpose.

The turtle dove is a general inhabitant, in summer, of the United States, from Canada to Florida, and from the sea-coast to the Mississippi, and far to the westward. This is a favourite bird with all those who love to wander among the woods in spring, and listen to their varied harmony. They there hear many a singular and sprightly performer; but none so mournful as this. The hopeless wo of settled sorrow swelling the heart of female innocence itself, could not assume tones more sad, or more tender and affecting. Its notes are four: the first is somewhat the highest and preparatory, seeming to be uttered with an inspiration of the breath, as if the afflicted creature was just recovering its voice from the last convulsive sobs of distress; this is followed by three long, deep, and mournful moanings, which no person of sensibility can listen to without sympathy. There is, however, nothing of real distress in all this. The bird who utters it wantons by the side of his beloved partner, or invites her by his call to some favourite, retired, and shady retreat. It is the voice of love, of faithful connubial affection, for which the whole family of doves are so celebrated; and, among them all, none more deservedly so than the species now before us.—The wild pigeon of the United States inhabits a wide and extensive region on this side of the Chippewayan Mountains. The most remarkable characteristic of these birds is their associating together, both in their migrations and during the period of incubation, in such prodigious numbers as almost to surpass belief, and certainly to have no parallel among any other of the feathered tribes on the face of the earth, with which naturalists are acquainted. Their roosting-places are always in the woods, and sometimes occupy a large extent of forest. When they have frequented one of these places for some time, the ground is covered to the depth of several inches with their dung; all the tender grass and underwood is destroyed; the surface is strewn with large limbs of trees, broken down by the weight of the birds clustering one above another; and the trees themselves, for thousands of acres, killed as completely as if girdled with an axe. The marks of this desolation remain for many years on the spot; and numerous places could be pointed out, where, for several years afterwards, scarcely a single vegetable made its appearance. When these roosts are first discovered, the inhabitants from considerable distances visit them in the night, with guns, clubs, long poles, pots of sulphur, and various other engines of destruc-

tion; and in a few hours they fill many sacks, and load their horses with the birds. The breeding-places are of greater extent than the woods. In the western countries they are generally in beech woods, and often extend nearly in a straight line across the country for a great way. Not far from Shelbyville, in the state of Kentucky, about five years ago, there was one of these breeding-places, which was several miles in breadth, and upwards of forty miles in length. In this tract, almost every tree was furnished with nests, wherever the branches could accommodate them. The pigeons made their first appearance there about the 10th of April, and left it altogether, with their young, before the 25th of May. As soon as the young were fully grown, and before they left the nests, numerous parties of the inhabitants, from all parts of the adjacent country, came with wagons, axes, beds, cooking-utensils, many of them accompanied by the greater part of their families, and encamped for several days at this immense nursery. "Several of them informed me," says Wilson, "that the noise in the woods was so great as to terrify their horses; and that it was difficult for one person to hear another speak, without bawling in his ear. The ground was strewn with broken limbs of trees, eggs, and young squab pigeons, which had been precipitated from above, and on which herds of hogs were fattening. Hawks, buzzards, and eagles, were sailing about in great numbers, and seizing the squabs from their nests at pleasure; while, from twenty feet upwards to the tops of the trees, the view through the woods presented a perpetual tumult of crowding and fluttering multitudes of pigeons, their wings roaring like thunder, mingled with the frequent crash of falling timber; for now the axe-men were at work, cutting down those trees that seemed to be most crowded with nests, and they contrived to fell them in such a manner, that, in their descent, they might bring down several others; by which means the falling of one large tree sometimes produced two hundred squabs, little inferior in size to the old ones, and almost one mass of fat. It was dangerous to walk under these flying and fluttering millions, from the frequent fall of large branches, which were broken by the weight of the multitudes above, and which in their descent often destroyed numbers of the birds themselves; while the clothes of those engaged in traversing the woods were completely covered with the excrements of the pigeons."

In his remarks on the *Columba Migratoria*, or passenger pigeon, the late Governor Clinton of New York embraces some observations of singular interest to the inquirer in natural history. "It is a

bird," says he, "peculiar to North America. It extends its migrations from Hudson's Bay to the Gulf of Mexico, and it occupies occasionally that vast region which reaches from the Gulf of St. Lawrence to the Rocky Mountains. Its change of residence is not owing to the influence of heat or cold, of rain or drought, but is made with a view to the acquisition of food. The vast flocks in which this bird congregates, are unequalled as to extent. La Hontan says that the bishop of Canada has been forced to exorcise them oftener than once, on account of the damage they do to the products of the earth. Weld, an English traveller, speaks of a flock eighty miles long flying over Lake Ontario; and Wilson the great ornithologist, estimates one seen in Kentucky two hundred and forty miles long, a mile broad, and containing two thousand two hundred and thirty millions, and two hundred and seventy-two thousand pigeons, which would consume, on a moderate allowance, seventeen millions four hundred and twenty-four thousand bushels of mast a day.

"The gregarious habits and vast flocks of this bird will of course occasion a correspondent consumption of food; and it is therefore compelled to be constantly erratic, and to be among the feathered race what the nomades are among mankind. The rapidity of its flight is superior to that of the carrier pigeon, which has been known to pass from St. Edmundsbury to London in two hours and a half. At this rate, the passenger pigeon can travel seven hundred miles in twenty-four hours; and at the rate of a mile a minute, the same distance in less than twelve hours; and this velocity may account for undigested rice being found in its craw six hundred miles from the rice fields: but as this has been observed in the spring of the year, it must have been derived in that case from the gleanings of a former season, or procured at a greater distance, or confounded with the *zizania aquatica* of the western waters. The favourite food of this bird is the beech nut, and it prefers to establish its roosting quarters and its breeding place within the reach of this aliment. It also subsists on the acorn, chestnut, wild cherry, seeds of the red maple, and of some weeds, poke, and other kinds of berry, buckwheat, and the principal cerealia. It resorts to the sea-shore and the salines of the west for salt, and it is frequently seen at the mineral springs of Saratoga enjoying the luxury of the waters.

"This bird is in much request as an article of food: and in the spring it arrives at an opportune period for our markets, during a scarcity of domestic poultry, and in the interval after the consumption of most of the old stock, and before the maturity of the

new brood. In the hard winter, as it is commonly called, of 1741, the weather was intensely cold from the middle of November to the latter end of March. The snow was six feet deep. The Hudson river was passed on ice at the city of New York. The cattle perished; and the deer were starved for want of food. The prices of food and fuel were exorbitant, and the sufferings of the poor were severe. In this crisis, and five or six weeks earlier than the time of their usual appearance, flights of wild pigeons appeared in greater numbers than were ever before known, and which, by the abundance of the food thus afforded, greatly relieved the prevalent distress. This at the time was attributed to a special interposition of providence, under a supposition that this bird is incapable of resisting severe cold; and this is now the general impression, which shows that its nature is not well understood. It has been seen at Hudson's Bay in the month of December, and large flocks were observed in Albany and the north-western parts of this state in January and February, 1819.

"There are other errors with respect to this bird. It is generally believed, that it will not breed in captivity, and that it is incapable of domestication. And our distinguished ornithologist, Wilson, has unhesitatingly asserted, that it only has one squab or young at a time.

"If this latter position were true, it would furnish an anomaly in ornithology. All birds of the Columba genus, have heretofore been supposed to produce by pairing, and to have two young at a time, generally a male and female. The male pigeon participates in the labours of nidification and incubation, supplies the female with food when on the nest, and assists in feeding the young. But where polygamy prevails among birds, the whole labour devolves on the mother. The domestic or exotic pigeon lays two eggs at a time; and our only indigenous birds of the Columba genus, (besides the passenger pigeon,) the turtle dove and the ground dove, do the same. Why then should the passenger pigeon be an exception? The male assists in building the nest, and occasionally relieves the female in incubation; and it is remarked, that in the breeding season, the two sexes are never seen together. This is owing to their divided labours: for the male makes up for the greater devotedness of the female to incubation, by occasionally supplying her and the young with food. We then can see no reason for so strange a departure from the general rule, attributed by Wilson to the passenger pigeon in the extent of its production; and when we further consider the prodigious flocks of this bird, transcending all other collections of birds, we cannot easily acqui-

esce in his opinion, especially as he admits that it only produces three or four times in a year. But there is no reasoning down facts, and this is a question of fact. On diligent inquiry, I am satisfied that Wilson has been misled by inaccurate information."

The quail, or partridge, is a general inhabitant of North America. Where they are not too much persecuted by the sportsmen, they become almost half domesticated; they approach the barn, particularly in winter, and sometimes, in that severe season, mix with the poultry to glean up a subsistence. What is commonly called the pheasant in Pennsylvania and the southern districts, is the ruffed grouse. Its favourite places of resort are high mountains, covered with the balsam pine, hemlock, and similar evergreens. Unlike the pinnated grouse, it always prefers the woods; is seldom or never found in open plains, but loves the pine-sheltered declivities of mountains near streams of water. The pinnated grouse avoid wet and swampy places, and are remarkably attached to dry ground; the low and open brush is preferred to high shrubbery and thickets. Into these latter places they fly for refuge when closely pressed by the hunters; and here, under a stiff and impenetrable cover, they escape the pursuit of dogs and men. During the time of mating, and while the females are occupied in incubation, the males have a practice of assembling by themselves. To some select and central spot, where there is very little underwood, they repair from the adjoining district; and from the exercises performed there, this is called a scratching-place. As soon as the light appears the company assembles, sometimes to the number of forty or fifty. When the dawn is past, the ceremony begins by a low tooting from one of the cocks; this is answered by another; and they then come forth one by one from the bushes, and strut about with all the pride and ostentation they can display. Their necks are incurvated; the feathers on them are erected into a sort of ruff; the plumes of their tails are expanded like fans; and they strut about in a style resembling, as nearly as small may be illustrated by great, the pomp of the turkey cock; they seem to vie with each other in stateliness; and, as they pass each other, frequently cast looks of insult, and utter notes of defiance. These are the signals for battles, in which they engage with wonderful spirit and fierceness, and during which they leap a foot or two from the ground, and utter a cackling, screaming, and discordant cry. After the appearance of the sun, they disperse. These places of exhibition have been often discovered by the hunters,

* Letter to J. W. Francis; New York Medical and Physical Journal, vol. ii. 1823.

who have freely availed themselves of the facilities thus afforded for the destruction of the birds; and the grouse, after having been repeatedly disturbed, are afraid to assemble. Several new species of grouse have recently been discovered by Mr. Douglas, among the Chippewyan Mountains: the finest bird of this species, however, is described by Charles Lucien Bonaparte, under the name of the cock of the plains. It must have formed, from the earliest periods, a principal ornament of the distant wilds of the west: hardly inferior to the turkey in size, beauty, and usefulness, this bird is entitled to the first place in the series of North American grouse, with a pre-eminence like that which the cock of the woods so justly claims among those of Europe and Asia.

The native country of the wild turkey extends from the north-western territory of the United States to the Isthmus of Panama. In Canada, and the now densely-peopled parts of the United States, they were formerly very abundant; but, like the Indian and the buffalo, they have been compelled to yield to the destructive ingenuity of the white settlers, often wantonly exercised, and to seek refuge in the remotest parts of the interior. On hearing the slightest noise, they conceal themselves in the grass, or among shrubs, and thus frequently escape the hunter, or the sharp-sighted birds of prey; and the sportsman is unable to find them during the day, unless he has a dog trained for the purpose. When only wounded, they quickly disappear, and, accelerating their motion by a sort of half flight, run with so much speed that the swiftest hunter cannot overtake them. The traveller driving rapidly down the declivity of one of the Alleghanies, may sometimes see several of them before him, evincing no urgent desire to get out of the road; but on alighting in hopes of shooting them, he soon finds that all pursuit is vain.*

The wading birds of the United States, as might be expected from the great extent of its various waters, are of great multitude and variety. The killdeer plover, so called from its note, is a restless and noisy bird, known to almost every inhabitant of the republic, being a common and pretty constant resident. During the severity of winter, when snow covers the ground, it retreats to the sea-shore, where it is found at all seasons; but no sooner have the rivers broken up, than its shrill note is again heard, either roaming about high in air, tracing the shore of the river, or running amidst the watery flats and meadows; as spring advances, it resorts to the newly ploughed fields, or level plains bare of grass, inter-

spersed with shallow pools; or, in the vicinity of the sea, to dry, bare, sandy fields. The oyster-catcher frequents the sandy sea-beach of New Jersey and other parts of the Atlantic coast, in summer, in small parties of two or three pairs together. They walk along the shore in a watchful, stately manner, at times probing it with their long wedge-like bills, in search of small shell fish. It is the only one of its genus hitherto discovered, and a fanciful observer might imagine, that it had borrowed the eye of the pheasant, the legs and feet of the bustard, and the bill of the woodpecker.

The whooping crane is the tallest and most stately species of all the feathered tribes of the United States; the watchful inhabitant of extensive salt marshes, desolate swamps, and open morasses in the neighbourhood of the sea. They wander along the marshy and muddy flats of the sea-shore in search of marine worms, sailing occasionally from place to place, with a low and heavy flight, a little above the surface; and they have at such times a very formidable appearance. At times they utter a loud, clear, and piercing cry, which may be heard at the distance of two miles; they have also various modulations of this singular note, from the peculiarity of which they derive their name. This bird is nearly five feet in height, and four feet six inches in length. The great heron is a constant inhabitant of the Atlantic coast, from New York to Florida; in deep snows and severe weather seeking the open springs of the cedar and cypress swamps, and the muddy inlets occasionally covered by the tides. On the higher inland parts of the country, beyond the mountains, they are less numerous; and one which was shot in the upper parts of New Hampshire, was considered as a great curiosity. The snowy heron is seen at all times during summer among the salt marshes, watching and searching for food, or passing, sometimes in flocks, from one part of the coast to another. They often make excursions up the rivers and inlets, but return regularly in the evening to the red cedars on the beach, to roost. The American bittern is a nocturnal species, common to all the sea and river marshes, though nowhere numerous: it rests all day among the reeds and rushes, and, unless disturbed, flies and feeds only during the night. In some places it is called the Indian hen; on the sea-coast of New Jersey, it is known by the name of *dunkadoo*, a word probably imitative of its common note. They are also found in the interior. It utters at times a hollow guttural note among the reeds, but has nothing of that loud booming sound for which the European bittern is remarkable.

* Bonaparte's Continuation of Wilson's Ornithology.

The United States present several species of the ibis, the curlew, and the sandpiper. One of the most common strand birds is the purre. It is extremely active and expert in running and searching among the sand on the reflux of the waves, as it nimbly darts about for food. These birds, in conjunction with several others, sometimes collect together in such flocks, as to seem, at a distance, a large cloud of thick smoke, varying in form and appearance every instant, while it performs its evolutions in the air: as this cloud descends and courses along the shores of the ocean with great rapidity, in a kind of waving serpentine flight, alternately throwing its dark and white plumage to the eye, it forms a very grand and interesting appearance. At such times the sportsman makes prodigious slaughter among them; while, as the showers of their companions fall, the whole body often alight, or descend to the surface with them, till he is completely satiated with destruction. The semipalmated snipe is one of the most noisy and noted birds that inhabit the salt marshes in summer. Its common name is the willet, by which appellation it is universally known along the shores of New York, New Jersey, Delaware, and Maryland, in all of which places it breeds in great numbers. It is peculiar to America. It arrives from the south on the shores of the Middle States about the 20th of April, or beginning of May; and, from that time to the last of July, its loud and shrill reiterations of *pill-will-willet*, *pill-will-willet*, resound almost incessantly along the marshes, and may be distinctly heard at the distance of more than half a mile. The American woodcock is universally known to the sportsman; but from the nature of the ground where they are to be sought, viz. deep mire intersected with old logs, which are covered and hid from sight by high reeds, weeds, and alder bushes, both men and dogs are soon tired out.

The clapper-rail is a very numerous and well-known species, inhabiting the whole Atlantic coast from New England to Florida. It is called by different names, such as the mud-hen, clapper-rail, meadow-clapper, big-rail, &c. Its principal residence is in the salt marshes. None of the species afford the American sportsmen greater entertainment, or a more delicate repast, than the Carolina rail. Early in August, when the reeds along the shores of the Delaware have attained their full growth, the rail resort to them in great numbers to feed on the seeds of this plant, of which they are immoderately fond. When the reeds are ripening, and even while they are in blossom, the rail are found to have taken possession of them in great numbers. As you walk

along the embankment of the river at this season, you hear them squeaking in every direction like young puppies; if a stone be thrown among the reeds, there is a general outcry, and a reiterated *kuk*, *kuk*, *kuk*, something like that of a guinea-fowl. In the mean time none are to be seen, unless it be at or near high water; for, when the tide is low, they universally secrete themselves among the interstices of the reeds, and you may walk past, and even over them, where there are hundreds, without seeing a single individual. On their first arrival, they are generally lean, and unfit for the table; but, as the reeds ripen, they rapidly fatten, and from the 20th of September to the middle of October they are excellent, and eagerly sought after. The usual method of shooting them in this quarter of the country is as follows:—The sportsman furnishes himself with a light boat, and a stout experienced boatman, with a pole of twelve or fifteen feet long, thickened at the lower end to prevent it from sinking too deep into the mud. About two hours or so before high water, they enter the reeds, and each takes his post, the sportsman standing in the bow ready for action, the boatman on the stern seat pushing her steadily through the reeds. The rail generally spring singly as the boat advances, and at a short distance ahead are instantly shot down, while the boatman, keeping his eye on the spot where the bird fell, directs the boat forward, and picks it up as the sportsman is loading. In this manner the boat moves steadily through and over the reeds, the birds flushing and falling, the sportsman loading and firing, while the boatman is pushing and picking up; and the sport continues till an hour or two after high water, when the shallowness of the water, and the strength and weight of the floating reeds, as also the backwardness of the game to spring as the tide decreases, oblige them to return.—The red flamingo is occasionally seen in Florida; and the roseate spoonbill inhabits the coast as high as Georgia. The latter bird has been found as far up the Mississippi as Natchez.

The black-skimmer, or sheerwater, is a truly singular fowl, the only species of its tribe hitherto discovered. It inhabits the whole Atlantic coast, during the summer, and retires early in September. Its favourite haunts are low sand bars, raised above the reach of the summer tides, and dry flat sands on the beach in front of the ocean. The sheerwater is formed for skimming while on wing the surface of the sea for its food, which consists of small fish, shrimps, young fry, &c. whose usual haunts are near the shore, and towards the surface. That the lower

mandible, when dipped into and cleaving the water, might not retard the bird's way, it is thinned and sharpened like the blade of a knife; the upper mandible being at such times elevated above the water, is curtailed in its length, as being not wanted, but it tapers gradually to a point, so that, on shutting, it offers little opposition. To prevent inconvenience from the rushing of the water, the mouth is confined to the mere opening of the gullet, which, indeed, prevents mastication taking place there; but the stomach, or gizzard, to which this business is solely allotted, is of uncommon hardness, strength, and muscularity, far surpassing in these respects any other water bird yet known. To these peculiarities is added a vast expansion of wing, to enable the bird to sail with sufficient celerity while dipping in the water. The general proportion of the length of the swiftest hawks and swallows to their breadth, is as one to two; but, in the present case, as there is not only the resistance of the air, but also that of the water, to overcome, a still greater volume of wing is given, the sheerwater measuring nineteen inches in length, and upwards of forty-four in breadth. The bill of this bird and his way of life have by some authors been depreciated; but whoever attentively examines this curious apparatus, and observes the possessor, with his ample wings, long bending neck, and lower mandible occasionally dipt into and ploughing the surface, and the facility with which he procures his food, cannot but consider it a mere playful amusement, when compared with the dashing immersions of the tern, the gull, or the fish-hawk, who, to a superficial observer, appear so much better accommodated. The laughing gull, known in America by the name of the black-headed gull, is one of the most beautiful and most sociable of its genus. They make their appearance on the coast of New Jersey in the latter part of April; and do not fail to give notice of their arrival by their familiarity and loquacity. The inhabitants treat them with the same indifference that they manifest towards all those harmless birds which do not minister either to their appetite or their avarice; and hence the black-heads may be seen in companies around the farm-house, coursing along the river shores, gleaning up the refuse of the fishermen and the animal substances left by the tide; or scattered over the marshes and newly-ploughed fields, regaling on the worms, insects, and their larvæ, which, in the vernal season, the bounty of nature provides for the sustenance of myriads of the feathered race.

The Canada goose is the common wild goose of the United States, whose migrations are the sure signals

of returning spring or winter. In their aerial voyages to and from the north, these winged pilgrims pass over the interior on both sides of the mountains, as far west, at least, as the Osage river. Wounded geese have, in numerous instances, been completely domesticated, and they readily pair with the tame gray geese; the offspring are said to be larger than either, but the characteristic marks of the wild goose still predominate. The sportsmen on the sea-shore have long been in the practice of taming the wounded of both sexes, and have sometimes succeeded in getting them to pair and produce. On the approach of every spring, however, these birds discover symptoms of great uneasiness, frequently looking up into the air, and attempting to go off; and some whose wings have been closely cut, have travelled on foot in a northern direction, and have been found at the distance of several miles from home. They hail every flock that passes overhead, and the salute is sure to be returned by the voyagers, who are prevented from alighting among them only by the presence and habitations of man. Our readers will be entertained with the following surprising but well-authenticated narrative:—

“Mr. Platt, a respectable farmer on Long Island, being out shooting in one of the bays which, in that part of the country, abound with water-fowl, wounded a wild goose. Being wing-tipped, and unable to fly, he caught it, and brought it home alive. It proved to be a female; and, turning it into his yard with a flock of tame geese, it soon became quite tame and familiar, and in a little time its wounded wing entirely healed. In the following spring, when the wild geese migrated to the northward, a flock passed over Mr. Platt's barn-yard; and, just at that moment, their leader happening to sound his bugle note, our goose, in whom its new habits and enjoyments had not quite extinguished the love of liberty, remembering the well-known sound, spread its wings, mounted into the air, joined the travellers, and soon disappeared. In the succeeding autumn, the wild geese, as was usual, returned from the northward in great numbers, to pass the winter in our bays and rivers. Mr. Platt happened to be standing in his yard when a flock passed directly over his barn. At that instant, he observed three geese detach themselves from the rest, and, after wheeling round several times, alight in the middle of the yard. Imagine his surprise and pleasure, when, by certain well-remembered signs, he recognised in one of the three his long-lost fugitive. It was she indeed! She had travelled many hundred miles to the lakes; had there hatched and reared her offspring; and had now re-

turned with her little family, to share with them the sweets of civilized life.”*

The mallard, or the common wild duck, is found in every fresh-water lake and river of the United States in winter, but seldom frequents the sea-shores or salt marshes. This bird is numerous in the rice-fields of the southern states during winter, many of the fields being covered with a few inches of water; and, the scattered grains of the former harvest lying in abundance, the ducks swim about and feed at pleasure. This is the original stock of the common domesticated duck, reclaimed time immemorial from a state of nature, and now become so serviceable to man. In many individuals, the general garb of the tame drake seems to have undergone little or no alteration; but the stamp of slavery is strongly imprinted in his dull indifferent eye and grovelling gait, while the lofty look, long tapering neck, and sprightly action of the free bird, bespeak his native spirit and independence.

The canvass-back duck, a celebrated American species, altogether unknown in Europe, arrives in the United States from the north about the middle of October. A few resort to the Hudson and Delaware, but the great body of these birds descend to the numerous rivers in the neighbourhood of the Chesapeake, particularly the Susquehannah, the Patapsco, Potomac, and James rivers, which appear to be their general winter rendezvous. They are chiefly found in that particular part of tide water where a certain grass-like plant grows, on the roots of which they feed. They swim with great speed and agility, and sometimes assemble in such multitudes as to cover several acres of the river; when they rise suddenly, they produce a noise resembling thunder. They float about the shoals, diving and tearing up the grass by the root, which is the only part they eat. They are extremely shy, and can rarely be approached, unless by stratagem; and when wounded in the wing, they dive to such prodigious distances, and with such rapidity, continuing it so perseveringly, and with such cunning and vigour, as almost always to render the pursuit hopeless. From the great demand for these ducks, and the high price they uniformly bring in market, various artifices are practised to get within gunshot of them. The canvass-back, in the rich juicy tenderness of its flesh, and its delicacy of flavour, stands unrivalled by the whole of its tribe in this, or perhaps in any other quarter of the world; and those killed in the waters of the Chesapeake are generally esteemed superior to all others, doubtless

from the great abundance of their favourite food which these rivers produce. At public dinners, hotels, and particular entertainments, the canvass-backs are universal favourites.

The widgeon is the constant attendant of the canvass-back duck, by the aid of whose labour he has ingenuity enough to make a good subsistence. This bird is extremely fond of the tender roots of that aquatic plant on which the canvass-back feeds, and for which that duck is in the constant habit of diving. The widgeon, who never dives, watches the moment of the canvass-back's rising, and, before he has his eyes well opened, snatches the delicious morsel from his mouth, and escapes. On this account the canvass-backs and widgeons, or, as they are called round the bay, bald-pates, live in a state of perpetual contention; the only chance the latter have is to retreat, and make their approaches at convenient opportunities. The goosander, called by some the water-pheasant, and by others the sheldrake, fisherman, diver, &c. is a winter inhabitant only of the sea-shores, fresh-water lakes, and rivers of the United States. They usually associate in small parties of six or eight, and are almost continually diving in search of food. Several species of merganser are common. The snake bird is an inhabitant of the Carolinas, Georgia, the Floridas, and Louisiana. It seems to have derived its name from the singular form of its head and neck, which at a distance might be mistaken for a serpent. Its habits too, while in the water, have not a little contributed to its name. It generally swims with its body immersed, especially when apprehensive of danger, with its long neck extended above the surface, and vibrating in a peculiar manner. “The first individual that I saw in Florida,” says Wilson, “was sneaking away to avoid me, along the shore of a reedy marsh which was lined with alligators, and the first impression on my mind was that I beheld a snake; but the recollection of the habits of the bird soon undeceived me. On approaching it, it gradually sank, and my next view of it was at many fathoms' distance, its head merely out of the water.” To pursue these birds at such times is useless, as they cannot be induced to rise, or even to expose their bodies. Wherever the limbs of a tree project over and dip into the water, there the snake birds are sure to be found; these situations being convenient resting-places for the purpose of sunning and preening themselves, and probably giving them a better opportunity than when swimming, of observing their finny prey. They crawl from the water upon the tree, and fix themselves in an upright position, which they maintain in the ut

most silence; and if there be foliage or long moss, they secrete themselves in it in such a manner that they cannot be perceived, unless one be close to them. When approached, they drop into the water with such surprising skill, that one is astonished how so large a body can plunge with so little noise, the agitation of the water being apparently not greater than that occasioned by the gliding of an eel.—The noise of the countless flocks of migratory water-fowl, as they journey through the air in the spring to the sources of the great rivers and lakes, and in autumn to the gulf of Mexico, is one of the most familiar sounds to the ear of an inhabitant of the west, and is one of his strongest and pleasantest associations with spring and autumn. The noise of migrating geese and ducks, at those periods, is also familiar to the ear of an Atlantic inhabitant; that of the swans, pelicans, and cranes, is peculiar to the central valley. The swan is well known for its stateliness and brilliant white. Its migrating phalanxes are in perfectly regular forms, as are those of the geese; and they sometimes join forces, and fly intermixed with each other. Their noise on the wing is like the distant sound of a trumpet. They are killed on the rice-lakes at the north in the summer, and in the gulf and its neighbouring waters in the winter; the younger ones are as fine for the table as geese.

Mr. Flint makes the following observation respecting the birds of the Mississippi valley, as compared with those of the Atlantic regions:—"This valley, embracing all the varieties of climate of the country east of the mountains, might be supposed to have the same birds, and those birds the same habits. The former is true, and the latter is not. We have noted no birds in the Atlantic country that we have not seen here; we have many that are not seen there; and those that are common to both regions have not the same habits here as there. We have no doubt, that cultivation and the presence of civilized man affect the habits, and even the residence, of birds. There are many in the more populous and cultivated regions beyond the mountains, that seem to belong to orchards and gardens, and that appear to exult and be at home only in the midst of fruit arbours, and groves reared by art and luxury. It is remarked in the more populous and cultivated districts of the west, that, in proportion as the wilderness disappears, and is replaced by apple, pear, peach, and plum trees, and fruit gardens, the birds which cheered the infancy of the immigrants, and whose notes are associated in recollection with the charms of youthful existence, and the tender remembrances of the natal spot, and a distant and

forsaken country, are found among the recent orchards. Every immigrant, especially, who was reared in New England, remembers the magpie, the bird of half-formed leaves, of planting, and the freshness of spring; and he remembers to have heard them chattering in the woods, almost to tiresomeness. They are occasionally seen in the middle and northern regions of this valley; but they are seldom heard to sing, and are only known by the lover of nature, who hears in the air, as they pass over his head, the single note which they utter in the east, when they are leaving that country. Some years since, in Missouri, we saw a number of the males gathered on a spray, in the midst of a low prairie, of a sunny morning, after a white frost; they were chattering away in their accustomed style, but they did but half carry out the song that we used to hear in the meadows of New England."

Reptiles, or animals of the serpent, turtle, and lizard class, are, of course, numerous in the United States.

All the varieties of the rattlesnake are seen, in some places in pernicious abundance. The yellow rattlesnake is the largest of the species; they are sometimes seen as large as a man's leg, and from six to nine feet in length. A species of small rattlesnake is sometimes seen in great numbers on the prairies; they are said, in the regions far to the west, to consort with prairie dogs, and to inhabit the same burrows. There is a very troublesome species, called snappers, or ground rattlesnakes; they travel in the night, and frequent roads and house-paths. The copper head is a terrible serpent, supposed to inflict a more dangerous bite than the rattlesnake; they inhabit the same region, but are not so common as the former. They are of a dirty brown colour; and when they have recently shed their skin, some parts of their body resemble burnished copper, whence they derive their name. There are three or four varieties of the moccasin snake inhabiting the southern country. The upland moccasin has many aspects in common with the rattlesnake, but is a serpent still more repulsive in appearance. They have been seen of great size, and their fang teeth are extremely large and long: they are most frequently seen basking among the bastard cane. The largest variety of the water moccasin resembles the water-snake of the Atlantic country. It has a very large flat head, and it opens its upper jaw at right angles to the under one. It is a lazy, reckless animal, neither flying nor pursuing man; it is a serpent of the largest size; has a ground-coloured, scaly back; and, in point of venom, is classed with the rattlesnake.

There is another species of the moccasin rarely seen out of the water, of a brilliant copper colour, with annular gray stripes, marking off compartments at equal distances. The brown viper, or hissing snake, is of a dirty brown colour, from six to eight inches long, with a body large in proportion, and terminating abruptly in a sharp tail : when angry, their backs change colour, and their heads flatten, and dilate to twice the common extent, and their hiss is like that of a goose. They are extremely ugly animals ; and, though very diminutive, are supposed to be of the most venomous class. One being confined by a stick across its back, it instantly bit itself in two or three places ; and when set at liberty it soon became very much swollen, and died. The accounts of the deadly venom of the horn-snake, being without actual attestation by fact, are considered as unfounded. Mr. Flint expresses his conviction that the Mississippi valley presents a greater number of serpents, and is more infested by them, than the country on the Atlantic, excepting perhaps the southern portion of it. Wherever the population becomes dense, the swine prey upon them, and they quickly disappear. Their most permanent and dangerous resorts are near the bases of rocky and precipitous hills, about ledges and flint knobs, and in the lower and southern country, along the stagnant water channels, and near those vast swamps that cannot be inhabited for ages. People are often bitten by these terrible animals ; the pain is excruciating, and the person that is badly bitten swells, and soon becomes blind. The more venomous of the serpents themselves become blind during the latter part of summer : they are then, of course, less apt to strike their aim ; but their bite, at this period, is most dangerous. The people suppose this blindness to be occasioned by the absorption of their own poison into their system. Whether it be that the numerous remedies that are prescribed are really efficacious, or whether the bite of these venomous reptiles is not fatal unless the poison is conveyed into some leading vein, or from whatever cause it be, it so happens that few fatalities occur from this cause.

Of harmless serpents this country has the usual varieties, as the green, garter, chicken, and coach-whip snakes. The glass-snake is often seen with a body of the most lustrous brilliance. A stroke across the back separates the body into a number of pieces ; each of these pieces preserves for some time the power of locomotion, and continues to exercise it ; and the inhabitants believe that these pieces soon meet, and unite, and become as before the separation. The bull, or prairie snakes, are of great size, and horrid

appearance : they are common on the prairies, live in holes in the ground, and run at the passing traveller with a loud hiss ; but if he stands, they instantly retreat to their holes. They are believed to be perfectly harmless ; though such is their size, boldness, and formidable appearance, that it is long before the resident in these regions gets over his horror of them.

Ugly animals of the lizard kind are seen, in greater or less numbers, in all the climates : they are found under rotten logs, and are dug from the rich and muddy alluvions ; these last are lazy and loathsome animals, and are called "ground puppies." It does not appear that they have any disposition to bite. Common small lizards are frequent in the southern districts, running along the logs, and making just such a sound as the rattlesnake, when he gives his warning. There are varieties of small cameleons ; they are apparently harmless animals, though, when caught, they show a disposition to bite. They will change in half an hour to all the colours of the prism. Green seems to be their favourite colour, and when on a green tree, that is their general hue ; while in this colour, the under part of their neck becomes of a beautiful scarlet ; their throat swells, and they emit a sharp note, like that of one of the larger kinds of grasshoppers when singing. "We have placed them on a handkerchief," says Mr. Flint, "and they have gradually assumed all its colours. Placed on a black surface, they become brown ; but they evidently suffer while under this colour, as is manifested by uneasy movements, and by strong and quick palpitations, visible to the eye. They are very active and nimble animals, three or four inches in length." Some lizards of a larger class and flatter heads are called scorpions ; they are animals of an ugly appearance, and are deemed very poisonous, though we have not found that any person has been known to be bitten by them. When attacked, they show the anger and the habits of serpents, vibrating a fiery and forked tongue, and biting with great fury at the stick which arrests them.

The alligator is the most terrible animal of this class. This large and powerful lizard is first seen in great numbers, in passing to the south, on the Arkansas, that is to say, a little north of 33° ; and this is its general northern limit across the continent. Vast numbers are seen in the slow streams and shallow lakes of Florida and Alabama ; but they abound most on Red river, the Mississippi lakes, and the bayous west of that river : forty at one time have been numbered on a muddy bar of Red river ; and on these sleeping waters, the cry of a sucking pig on the banks

will draw a shoal of them from their muddy retreats at the bottom. The largest alligator that Mr. Flint ever saw killed in these regions measured something more than sixteen feet from its snout to the extremity of its tail. They have at times, especially before stormy weather, a singular roar or bellow, not exactly as Bartram has described it, like distant thunder, but more like the half-suppressed roarings of a bull. When moving about on their customary avocations in the water, they seem like old logs in motion. In fine weather they dose in listlessness on the sand-bars; and such is their recklessness, that they allow the people on the passing steam-boats to come within a few paces of them. The ascent of a steamboat on an alligator stream, at the proper season for them, is a continual discharge of rifles at them; a rifle ball, however, will glance from their bodies, unless they are hit in a particular direction. They are not, like tortoises and other amphibious animals, tenacious of life, but bleed profusely, and immediately expire when mortally wounded. They strike with their tails coiled into the section of a circle; this blow has great power, and the animal stricken is, by the same blow, propelled towards their mouth, to be devoured. Their strength of jaw is prodigious, and they are exceedingly voracious. They have large ivory teeth, which contain cavities sufficiently large to hold a musket-charge of powder, for which purpose they are commonly used by sportsmen. The animal, when slain, emits an intolerable smell of musk; and it is asserted that its head contains a quantity of that drug. They will sometimes chase children, and would overtake them, were it not for their inability to make lateral movements. Having few joints in their body, and very short legs, they cannot readily turn from a straight-forward direction; consequently, those who understand their movements avoid them without difficulty, by turning off at right angles, and leaving the animal to move forward, under its impulse in that direction: indeed, they are by no means so dangerous as they are commonly reputed to be. It is said they will attack a negro in the water in preference to a white; but they are chiefly formidable to pigs, calves, and domestic animals of moderate size. They are rather objects of terror from their dimensions, strength, and ugly appearance, and from their large teeth and strong jaws, than from the actual injuries which they have been known to inflict. The skin of the alligator is valuable for the tanner.

The tortoise is found in considerable variety and number. The soft-shelled mud-tortoise of the lakes about New Orleans, and west of the Mississippi, is said to be not much inferior to the West India sea-

turtle for the table; and epicures who are dainty in their food consider their flesh a great delicacy.—In the pine barrens of Florida, Alabama, and Mississippi, is found an animal, apparently of the tortoise class, commonly called the gouffre. It has a large and thick shell, and burrows to a great depth in the ground; it is of prodigious power and strength, and resembles in many respects the loggerhead-turtle.—The siren (*murena siren*) is a very singular animal; it somewhat resembles the lamprey, and is nearly two feet in length. It seems intermediate between the fish and the lizard class; it has two short legs, placed near the head, is amphibious, and penetrates the mud with the facility of a crawfish.—The whole of the republic is prolific in frogs, toads, and animals of that class, but more especially so the more southerly parts of it, the land of lakes, marshes, and swamps, combined with high temperature. The deep notes of the bull-frog are heard in perfection in the swamps at the back of New Orleans.

It is reasonable to suppose that so vast an extent of maritime and inland waters should afford a great quantity and variety of the finny tribes; it is to be regretted, however, that very small progress has yet been made in the scientific observation of this interesting class of animals. American ichthyology is yet in its infancy.

Nevertheless, several American writers have contributed advantageously towards the elucidation of this subject. The most conspicuous of these is the late Dr. Samuel L. Mitchill, whose elaborate memoir of the fishes of New York has commanded the approbation even of Cuvier. In the paper of Dr. Mitchill now referred to, and printed in the first volume of the Transactions of the Literary and Philosophical Society of New York, there are enumerated no less than one hundred and forty-seven species of fish, inhabitants, or visitors, of the waters of New York, besides varieties, nineteen, making a total of one hundred and sixty-six.* I can not entertain a doubt, says Dr. Mitchill, that there are various kinds which I have neither seen nor heard of. I have reason to believe that the caprinus or carp family, the esox or pike, and the salmo or trout, will be found to comprehend a considerable number of new sorts. In the Transactions of the same society, may be found a paper on the fishes of the western waters of the state of New York, by Governor De Witt Clinton. The ichthyology of the United States is still further illustrated by other eminent writers, (Le Sueur, &c.) in the recent volumes of the Transactions of the American

* See Transactions of the Literary and Philosophical Society of New York, vol. i.

Philosophical Society of Philadelphia, in the Journal of the Academy of Natural Sciences of Philadelphia, and in the Annals of the Lyceum of Natural History of New York.

The fishes which fill the coasts and bays of the United States are generally of the same species as on the opposite coasts of Europe. They are abundant, especially along the shore of the New England states, which, however, have no bank of the same extreme richness as that of Newfoundland. The shad and the salmon are fine fish, abounding in the Atlantic rivers; and beautiful trout are taken in the mountain streams of the northern states. Among the fish of the western waters, probably in a great measure common to them and other rivers, are noticed several varieties of perch, one of which, the buffalo-perch, derives its name from the singular grunting noise which it makes, a noise which is familiar to every one who has been much on the Ohio. It is a fine fish for the table, weighing from ten to thirty pounds. There are also varieties of the sun-fish, the bass, and the hog-fish. Besides the shad, false herring, and trout, we find in these waters sixteen species of minny, the largest of which are called shiners; but the brown buffalo-fish is one of the best fishes in the western rivers, and is found in all of them, in length from two to three feet, weighing from ten to thirty pounds. The black buffalo-fish, found in the lower waters of the Ohio and in the Mississippi, sometimes weighs fifty pounds. The buffalo of the Mississippi is larger; it is taken in immense quantities in the meadows and lakes of the Mississippi, and greatly resembles the Atlantic shad. The trout of Louisiana and Florida is not the same with the fine fish of that name that is taken in the cold mountain streams of the northern country of the Atlantic; it is a fish of the perch class, beautifully marked with golden stripes, and taking the bait with a spring, like the trout. It weighs from one to four pounds, and is a fine-flavoured and solid fish for the table. "We have never witnessed angling," says Mr. Flint, "that could compare with that of this fish in the clear pine-wood streams of the southern divisions of this country. With fresh bait, a barrel may be taken in a few hours."

The *Salmo Otsego*, or the Otsego bass, is a superior fish, caught in the Otsego lake, New York, and may be considered as almost a non-descript. Some account of it was published several years ago by Governor Clinton. A specimen of one in the governor's possession, was seventeen inches in length, five in depth, and in one thickness, and it weighed two pounds six ounces. "The pupil of the eye is black," says he; "the iris silvery; the opercula spot-

ted with yellow on a silver ground; the mouth small, and exactly like that of a shad, except a little protuberance of the upper lip, which is also bifid. No teeth in the jaws, palate, roof of the mouth, tongue, or throat. The lateral line straight, and hardly discernible; appearance of lateral stripes, like the *Perca Mitchilli*, or Roch fish—colour silvery white below the *linea lateralis*—somewhat darkish above it; scales small; back highly curved. The first dorsal fin has nine softish rays, three of which are imperfect: it is about midway in the back, and over the ventral fin. The second dorsal fin is small and filamentous, and directly over the anal fin. The caudal fin is forked—the belly not serrated.

"This fish is of the abdominal order, and cannot be satisfactorily arranged under any genus of the Linnæan system. As it is, however, included in Bloch's description of the salmon, which he represents as an abdominal fish, with an adipose fin on the back, and a body covered with scales, I shall, in order to avoid the multiplication of genera, consider it as a *Salmo*; and, as it is probably a non-descript, and peculiar to the Otsego lake, its specific name may, with propriety, be derived from the water which it inhabits: I shall, therefore, call it *Salmo Otsego*.

"This fish is nearly equal to any fish that swims for exquisite and delicious food. It is among fishes, what the grouse, or canvass-back duck, is among birds. The flesh is fine, white, and delicate.

"It sometimes weighs six pounds; it is never found in the neighbouring lakes or streams, or in the Susquehannah river. It is not anadromus, and appears to be always stationary in the lake. It appears in shoals every spring and fall, and at other times retires to the deeps of the lake, like the black bass and perch of lake George, which are only seen periodically. The latter lake has no outlet which can be ascended by fish: This proves, conclusively, that their retreat is only into its deep waters: and as these lakes are very deep, they afford ample space for seclusion. Perhaps the notion of Pennant, that the herring proceed from the Polar seas, is incorrect. I cannot believe that they extend their migrations beyond the seas in which they periodically appear.

"The Otsego bass is very rarely taken by the hook. It was formerly caught in great numbers by the seine—sometimes five thousand at a draught. There is now a comparative scarcity. The diminution of fish, greatly in demand, may be attributed, generally, to the havoc created by the increasing population of the country, and to the destruction of

the food of fishes produced by cultivation ; but in this case it is ascribed to peculiar causes.”*

The cat-fish is the most common fish in all the western waters. Twelve species have already been noted in the Ohio, and the varieties are very numerous in the waters west of that river. They are without scales, and of all colours and sizes ; their mouths, when open, are circular ; and they are easily taken with a hook. They receive their English name from the noise which they make when at rest ; a noise very similar to the purring of a cat, and one of the most familiar to those who are used to the western states. The cat-fish of the Mississippi often weighs more than a hundred pounds.—The Ohio toter is a fish of the length of from two to three inches ; it makes itself a cell by surrounding its place with pebbles ; and hence, from the Virginia word “tote,” to carry, is called a toter.—There are a great many species of pike in the Ohio and the Mississippi, and their waters ; they are called pike, pickerel, and jack-fish, and perfectly resemble the fish of the same names in the Atlantic waters. They vary from half a pound to twenty pounds.—Of the gar-fish there are a great many varieties in the western country. The alligator-gar is sometimes eight feet in length, and is strong, fierce, voracious, and formidable, not only to the fish, which he devours by tribes, but even to men, who go into the water near him. Its dart equals the flight of birds in rapidity. It has a long, round, and pointed mouth, thick set with sharp teeth ; its body is covered with scales of such a texture, as to be impenetrable by a rifle bullet, and, when dry, to make fire with steel. It is a fish of most outlandish appearance, weighing from fifty to two hundred pounds. It is considered as a far more formidable animal than the alligator : it is, in fact, the shark of rivers.—The devil-jack-diamond-fish is another monster of the rivers. It is rarely seen as high as the falls of Ohio, and probably lives in the Mississippi : its length is from four to ten feet, and one was caught which weighed four hundred pounds. It is extremely voracious ; and, like the preceding, its scales will give fire with the steel.

Eels are in length from two to four feet. The yellow eel is the best species for the table. Six species of sturgeon occur in these rivers, some of them four feet in length, and some of them eatable. There is also a Mississippi saw-fish, in length from three to six feet ; it has twenty-six long sharp teeth on either side, in the form of a saw, and is commonly shown in museums. Likewise a spotted horn-fish, in length

from two to three feet ; the horn being one fourth the length of the body. The bar-fish are taken with a hook ; they go in shoals in the southern running waters, weighing from one to three pounds, and are beautifully striped with brown and silver. The spade, or shovel-fish, a mud fish of the middle regions of the valley, is found in muddy lakes ; they weigh from ten to fifty pounds, are without scales, and have, in advance of their mouths, a smooth bony substance, much resembling an apothecary's spatula, from six inches to a foot in length, and two or three inches in width ; its use, apparently, is to turn up the mud in order to find subsistence. They are extremely fat, and are taken for their oil. “We have never remarked this fish in any museum,” says Mr. Flint, “although to us the most strange and whimsical-looking fish we have seen. We have seen,” he adds, “one instance of a horribly deformed animal, apparently intermediate between the class *testudo* and fishes. We saw it in a water of the Washita, and had not a fair opportunity to examine it. It is called toad-fish ; has a shell like a tortoise ; but has the other aspects of a fish. It is said to be sufficiently strong to bear a man on its back ; and, from the account of those who have examined it, this animal must be a singular *lusus naturæ*.”—The drum, rock-fish, sheep's-head, &c. are large and fine fish, taken in the lakes on the gulf of Mexico that are partially mixed with salt water, and so saline as not to be potable. They correspond in size to the cod and had-dock of the Atlantic country, and are among the most common fish in the market at New Orleans. The fish of the gulf shore are of a very peculiar character, being taken in shallow lakes, principally composed of fresh water, but having outlets into the gulf, through which, when the wind blows strongly from the south, the sea-water is forced to such a degree that they become salt : the fish, accordingly, possess an intermediate character, between those of fresh and salt water. There are vast numbers of crawfish everywhere in the shallow waters and low grounds. By penetrating the bank of the Mississippi, they have more than once made perforations which have imperceptibly enlarged to crevices, by which the inundation of the river has been let in upon the country.

The fish of the western rivers are generally less esteemed than those of the Atlantic waters, and, as it would appear, with some justice ; although, in making the comparison, it should in fairness be remembered that fresh-water fish in general will not vie with those of the sea. The fishes of the Mississippi and its tributaries, generally, are tough, coarse, large

* New York Medical and Physical Journal, vol. i. p. 188, 189.

and unsavoury. The trout, so called, and the bar-fish, are fine. The pike, perch, and other fish of the Illinois, are represented as excellent; and in that river they are taken in great abundance. A line, here called a "trot line," drawn across the mouth of the Illinois where it enters the Mississippi, with hooks appended at regular distances, took five hundred pounds in a night. "Except the trout, the small yellow cat-fish, the pike, the bar-fish, and the perch," says Mr. Flint, "we do not much admire the fish of the western waters."

Dr. Mitchell gives the following account* of a gigantic fish of the ray kind, which he calls the oceanic vampire. It had been taken in the Atlantic Ocean, near the entrance of Delaware Bay, by the crew of a smack. They had heard that creatures of extraordinary form and size were frequent in the tract situated off Capes May and Henlopen, during the warm season; and accordingly equipped themselves for the purpose of catching one or more of them. After an absence of about three weeks, the adventurers returned with an animal of singular figure and large magnitude, which they had killed after a long and hazardous encounter. The weight was so considerable after it had been towed to the shore, that three pair of oxen, aided by a horse and twenty-two men, could not drag it, by their united strength, to the dry land. By estimation it was supposed to be between four and five tons.

	Feet.	Inches.
The length from the fore margin of the head to the root of the tail	10	9
Length of the tail	4	0
Length of the fins projecting forward from the corners of the mouth	2	6
	17	3

Making the whole length, from the tip of the head fins to the tip of the tail, seventeen feet and three inches. The breadth from the extremity of one pectoral fin or wing to the other, measuring along the line of the belly, was sixteen feet; when measured over the convexity of the back, eighteen feet. On each side of the mouth there was a vertical fin two feet and six inches long, twelve inches deep, and two inches and a half thick in the middle, whence it tapered toward the edges, which were fringed before with a radiated margin. The fin or organ so constituted could, from its flexibility, bend in all directions, and be made in many respects to perform the function of a hand, so as by twisting round, to seize an object and hold it fast. The wings, flaps, or pec-

toral fins, were of very curious organization. There was a scapula, humerus, ulna, carpus, and an uncommon number of phalanges, of a cartilaginous structure; all these joints were articulated with each other, but the articulations, like those of the human sternum, had very little motion. It had more analogy to the wing of a bird than to any thing else; and yet was so different from it, as to manifest a remarkable variety of mechanism, in organs intended substantially for the same use. Fish of the kind now under consideration may be aptly denominated submarine birds, for they really fly through the water as birds fly through the air. Fishes of this organization perform their flights by flapping their wings after the manner of crows, hawks, and eagles, in their progress.

The insects of the United States are of course numerous, and many of them of great beauty. Many of the species are entirely new, and science is particularly indebted to Mr. Say for the addition of no inconsiderable number to American entomology.† The moths and butterflies are extremely splendid, and one of them, the atlas moth, the largest hitherto known. Among the spiders is a huge species, called the tarantula, supposed to inflict a dangerous bite. The annoyance inflicted by the mosquito flies, a species of gnat, in hot weather is well known; by these, and other insects armed with stings, damp and low situations are rendered during the summer almost untenable. The fire flies, which glitter especially in the forests of the south, are merely entertaining. The copper-coloured centipede, a creature of a cylindrical form, and as long as a man's finger, is dreaded as noxious; a family is said to have been poisoned by taking tea in which one of them had been inadvertently boiled.

One insect, the *ageria exitiosa*, has long been the cause of solicitude and regret to all lovers of fine fruit in the republic, as the insidious destroyer of the peach tree. The larva commences its destructive career about the beginning of October, by entering the tree, probably through the tender bark under the surface of the soil; after having passed through the bark, it proceeds downwards, within the tree, into the root, and then turns its course upwards towards the surface, where it arrives about the commencement of the succeeding July. They voraciously devour both the alburnum and the liber, the new wood and the inner bark, leaving the cortex and epidermis as a covering and defence. The insects deposit their eggs within the bark of the tree, which they perforate

* Annals of the Lyceum of Natural History, New York, vol. i.

† See Say on American Entomology, 8vo.; also the same au-

thor, in the Transactions of the American Philosophical Society, &c.

by a blunt-pointed instrument, and leave from one to three hundred eggs, according to the capacity of the tree to support their progeny.

The United States are not free from the scourge of the locust. The males have under each wing a ribbed membrane as thin as a gossamer's web, which, when inflated, constitutes their musical organ. The female has a tuberosus sting or drill the size of a pin, and near half an inch in length, of a hard and brittle substance, which lies on the under surface of the body; with this the insect drills a hole into the small limbs

of trees quite to the pith: there it deposits through this hollow sting or drill some dozen or two of small white eggs. The time required to drill the hole and deposit the eggs is from two to five minutes. When undisturbed they make some half dozen or more insertions of their drill in the same limb, perhaps an inch apart, and these punctures usually produce speedy death to the end of the limb. They sometimes swarm about the forests in countless multitudes, making "melancholy music," and not less melancholy desolation.

BOOK III.

STATISTICS.

CHAPTER I.

AGRICULTURE.*

It would manifestly be foreign to the nature of the present undertaking, even did we deem ourselves competent to the task, to enter into the general theory or science of agriculture. It will, however, be our endeavour to give a brief yet faithful sketch of the agriculture, in the most comprehensive sense of the term, of the United States, enlarging only either on those points which are peculiar to that country, or upon productions which differ materially from those of Great Britain. The vast extent of latitude, and the consequent variety of climate which the republic comprises, will give to the subject a variety, interesting even to those who are not engaged in that most primitive of all occupations—the cultivation of the soil.—The agriculture of the United States naturally divides itself into northern and southern: the middle states, indeed, partake of some of the characteristics of both extremes, but do not, in a brief summary like the present, require to be ranked as a separate class; while the culture of the soil in the southern states is so entirely different in its processes and its products, that it is impossible to mingle its history with that of the northern portion of the Union.

It appears to be admitted by our transatlantic

* It would have been, perhaps, more accordant with strict propriety, to have commenced this section of the work with the chapter on population; but as the publication of the census of 1831 may be shortly expected, it has been deemed advisable to defer the account of the population to a subsequent portion of the work.

† "It is indeed a lamentable truth," says Mr. Watson, "that, for the most part, our knowledge and practice of agriculture, at the close of the revolutionary war, was in a state of demi-barbarism, with some solitary exceptions. The labours, I may say, of only three agricultural societies in America at that epoch, conducted by ardent patriots, by philosophers, and gentlemen in this state, Philadelphia, and Boston, kept alive a spirit of inquiry, often resulting in useful and practical operations; and yet, these measures did not reach the doors of practical farmers to any visible extent. Nor was their plan of organization calculated to infuse a spirit of emulation, which farmer, which county, or state, should excel in the honourable strife of competition in discoveries and improvements, in drawing from the soil the greatest quantum of net profits within

neighbours themselves, that while most abundant supply of all the bounties of nature has ever been their peculiar privilege, agriculture as a science has, till recently at least, been at a very low ebb.† The neglected state of this important branch of political economy may be traced to the condition of the first settlers and their descendants, rather than to any defect in soil or climate. Their first settlements were made along the shores of the sea, or on the banks of navigable waters. The ocean and its tributary streams offered fields for cultivation easier and more lucrative, in the scattered state of their population, than any which the land could afford. The fisheries, and navigation, thus naturally arrested the attention and chiefly occupied the thoughts of early settlers; and whatever there was of agriculture was limited to the supply of the essential necessities of the people, and to the yielding of a scanty surplus for the humble demands of colonial commerce. The circumstances of the country during the first century and a half after its settlement,—down to the time, indeed, of the revolutionary struggle,—were such as tended unavoidably to reduce agriculture below its just consequence in the scale of useful employments; and to elevate all the arts connected with navigation in a proportionate degree above their proper estimation. Not only was a large proportion of the little capital

a given space; at the same time keeping the land in an improving condition, in reference to its native vigour. These results, and the renovation of lands exhausted by means of a barbarous course of husbandry for nearly two centuries, are the cardinal points now in progression in our old settled countries, stimulated by the influence of agricultural societies. Nor did their measures produce any essential or extensive effects in the improvement of the breeds of domestic animals; much less in exciting to rival efforts the female portion of the community, in calling forth the active energies of our native resources in relation to household manufactures. The scene is now happily reversed in all directions. Perhaps there is no instance in any age or country, where a whole nation has emerged, in so short a period, from such general depression, into such a rapid change in the several branches to which I have already alluded; in some instances it has been like the work of magic."—*Memoirs of the Board of Agriculture of the state of New York*, vol. iii. p. 524.

then in the country attracted to the pursuits of commerce, and drawn away from those of agriculture, but the temptations to trade and to a seafaring life were so strong, as often to deprive the farmer of the most active and intelligent of his sons. When to this is added the unceasing drain upon the agricultural population, by the prospects which the extent of the interior and the cheapness of lands opened to their enterprise, and the consequent effect upon the demand for labour, there is more cause of surprise that the actual state of cultivation is so good, than of reproach that it did not receive higher improvement. Besides, in England itself the state of agriculture did not begin to attract any general and systematic attention until a little after the middle of the last century. The American farmer and capitalist would probably have joined earlier in the eager activity which this new state of things excited, had not the revolutionary contest, and the subsequent political embarrassments, at one period, both deprived them of the means of doing so, and forced their attention upon other objects; and had not, subsequently, the advantages resulting from neutrality during the wars of the French revolution, required at another the employment of all, and more than all, the pecuniary resources of the country.

A very different arrangement in the relations of the useful arts to each other seems to have commenced in America, upon the new state of things which peace among the powers of Europe, and the increase of population and capital, (the effect of time and of successful commercial industry,) have induced. The natural result of peace, and of the comparatively unrestricted competition of the commercial nations of the earth, must necessarily be to limit the sphere of commercial speculation, and to diminish its profits; and capital will therefore be thrown back from the water, to seek employment upon the land. Of the excess, beyond the wants of the merchant, one part will be applied directly to agriculture, and the other indirectly, by its being vested in manufactures; for whatever tends to create and fix a great population in a country, must manifestly tend to increase in that country the production of food necessary for its support: it may therefore be safely asserted, that whatever capital commerce cannot employ, becomes eventually a bounty on agriculture, until at least the resources of a country for vegetable production are fully developed. The republic already begins to perceive the effects of the great increase of capital and population, in the attention paid to the cultivation of the soil, in the agricultural associations, and the legislative patronage, which are active in the

principal states of the Union. A new era in the state of agriculture has unquestionably commenced; the effect of which is to attract general consideration and concern for the art, to stimulate the ambition of the farmer, and to multiply and concentrate the means of information in relation to all the subjects connected with its prosperity.

Feelings of deep disappointment appear to have been excited in the minds of most English agriculturists, who either engaged in the labours of the field themselves, or visited the farms of the republic, arising, as it appears to us, from the want of a due consideration of the different—the opposite—circumstances, in which the two countries are placed. In perusing the volumes of Messrs. Parkinson, Faux, Fearon, and others, some hundred pages of invective occur, because the Americans will persist in taking up fresh land, instead of the more costly process of manuring a worn-out soil; will raise extensive crops, instead of highly cultivating and beautifying a small space; in fact, will employ their time in a manner calculated, in their estimation at least, to produce the greatest profit with the least exertion.

In noticing the process of taking possession of and clearing for cultivation the virgin soil, some account of the simple agricultural erections which the settler requires will be both necessary and interesting. The building first erected on a new lot, or on a tract of land not yet cleared from its native growth of timber, is what is called a log-house. This is a hut or cabin made of round, straight logs, about a foot in diameter, lying on each other, and notched in at the corners. The intervals between the logs are filled with slips of wood, and the crevices generally stopped with mortar made of clay. The fire-place commonly consists of rough stones, so placed as to form a hearth, on which wood may be burned. Sometimes these stones are made to assume the form of a chimney, and are carried up through the roof; and sometimes a hole in the roof is the only substitute for a chimney. The roof is made of rafters, forming an acute angle at the summit of the erection, and is covered with shingles, commonly split from pine-trees, or with bark peeled from the hemlock (*pinus canadensis*.) When the occupant or first settler of this new land finds himself in comfortable circumstances, he builds what is styled a frame-house, composed of timber, held together by tenons, mortises and pins, and boarded, shingled, and clap-boarded on the outside, and often painted white, sometimes red. Houses of this kind generally contain a dining-room and kitchen, and three or four bed-rooms on the same floor. They are rarely destitute of good cellars, which the nature of the climate

enders almost indispensable. The farm-buildings consist of a barn, proportioned to the size of the farm, with stalls for horses and cows on each side, and a threshing-floor in the middle; and the more wealthy farmers add a cellar under the barn, a part of which receives the manure from the stalls, and another part serves as a store-room for roots, &c., for feeding stock. What is called a corn-barn is likewise very common, which is built exclusively for storing the ears of Indian corn. The sleepers of this building are generally set up four or five feet from the ground, on smooth stone posts or pillars, which rats, mice, or other vermin, cannot ascend.

In those parts of the country where wood is of but little value, the trees are felled in one of the summer months, the earlier in the season the better, as the stumps will be less apt to sprout, and the trees will have a longer time to dry. The trees lie till the following spring, when such limbs as are not very near the ground should be cut off, that they may burn the better. Fire must be put to them in the driest part of the month of May, or, if the whole of that month prove wet, it may be applied in the beginning of June. Only the bodies of the trees will remain after burning, and some of them will be burned also: those which require to be made shorter having been cut in pieces nearly of a length, they are drawn together by oxen, piled in close heaps, and burned; such trees and logs only being reserved as may be needed for fencing the lot. The heating of the soil so destroys the green roots, and the ashes made by the burning are so beneficial as manure to the land, that it will produce a good crop of wheat or Indian corn without ploughing, hoeing, or manuring. If new land lie in such a situation that its natural growth may turn to better account, whether for timber or fire-wood, it will be unpardonable waste to burn the wood on the ground; but if the trees be taken off, the land must be ploughed after clearing, or it will not produce a crop of any kind. The following remarks on this subject are extracted from some observations by Samuel Preston, of Stockport, Pennsylvania, a very observing cultivator, and may prove serviceable to settlers on uncleared lands. Previous to undertaking to clear land, Mr. Preston advises—"1st. Take a view of all large trees, and see which way they may be felled for the greatest number of small trees to be felled along-side or on them. After felling the large trees, only lop down their limbs: but all such as are felled near them should be cut in suitable lengths for two men to roll and pile about the large trees, by which means they may be nearly all burned up without cutting into lengths, or the expense of a strong team, to draw them

together. 2d. Fell all the other trees parallel, and cut them into suitable lengths, that they may be readily rolled together without a team, always cutting the largest trees first, that the smallest may be loose on the top, to feed the fires. 3d. On hill-sides fell the timber in a level direction, then the logs will roll together; but if the trees are felled down hill, all the logs must be turned round before they can be rolled, and there will be stumps in the way. 4th. By following these directions, two men may readily heap and burn most of the timber, without requiring any team; and perhaps the brands and the remains of the log-heaps may all be wanted to burn up the old fallen trees. After proceeding as directed, the ground will be clear for a team and sled to draw the remains of the heaps where they may be wanted round the old logs. Never attempt either to chop or draw a large log, until the size and weight are reduced by fire. The more fire-heaps there are made on the clearing, the better, particularly about the old logs where there is rotten wood. The best time of the year to fell the timber in a great measure depends on the season's being wet or dry. Most people prefer having it felled in the month of June, when the leaves are of full size. Then, by spreading the leaves and brush over the ground, (for they should not be heaped,) if there should be a very dry time the next May, fire may be turned through it, and will burn the leaves, limbs, and top of the ground, so that a very good crop of Indian corn and pumpkins may be raised among the logs by hoeing. After these crops come off, the land may be cleared and sowed late with rye and timothy grass, or with oats and timothy in the spring. If what is called a good burn cannot be had in May, keep the fire out until some very dry time in July or August, then clear off the land, and sow wheat or rye and timothy, harrowing several times, both before and after sowing; for, after the fire has been over the ground, the sod of timothy should be introduced as soon as the other crops will admit, to prevent briars, alders, fire-cherries, &c. from springing up from such seeds as were not consumed by the fire. The timothy should stand four or five years, either for mowing or pasture, until the small roots of the forest-trees are rotten; then it may be ploughed; and the best mode which I have observed is, to plough it very shallow in the autumn; in the spring, cross-plough it deeper, harrow it well, and it will produce a first-rate crop of Indian corn and potatoes, and, the next season, the largest and best crop of flax that I have ever seen, and be in order to cultivate with any kinds of grain or to lay down again with grass. These directions are to be understood as applying to

what are generally called beech lands, and the chopping may be done at any time in the winter, when the snow is not too deep to cut low stumps, as the leaves are then on the ground. By leaving the brush spread abroad, I have known such winter choppings to burn as well in a dry time in August as that which had been cut the summer before."*

The subject of improving the character of various inferior soils, or of restoring exhausted soils, by manure, is becoming of increasing importance to the American farmer, and has consequently attracted increasing attention. It is true that in situations in which large sections of fertile soil still remain unoccupied, the subject is at present of little or no importance; but to localities in the vicinity of cities or populous towns, where the land has risen to a great value, it is a question of deep interest. Drought is one of the greatest evils to which the soil of America is exposed, and gypsum is very extensively used, from the quality it possesses of attracting moisture. It does not answer near the sea or salt water, nor on wet stiff lands; it answers best on hot, loose, or sandy soils, and if strewed over the land, five or six bushels are found sufficient for an acre. Bone-dust would probably answer where gypsum will not succeed. The method of using all manures of animal or vegetable origin while fresh, before the sun, air, or rain, or other moisture, has robbed them of their most valuable properties, now generally prevails; but it was formerly the practice to place barn-yard manure in layers or masses for the purpose of rotting, and turn it over frequently with the plough or spade, till the whole had become a mere *caput mortuum*, destitute of almost all its original fertilizing substances, and deteriorated in quality almost as much as it was reduced in quantity. It would be foreign to our purpose to enter more particularly into the system of manuring practised in the United States; the results of the experiments of many respectable agriculturists will be found in the publications of the New York, Pennsylvania, and other agricultural societies.

The price of labour being very high, especially when compared with the value of produce, draining is but little attended to.—The fences are almost exclusively wooden rails, thorn hedges being very rare. In the eastern states it is probable that the thorn would not succeed, owing to the severe frosts in winter; but in the middle and western states there is no doubt that it would flourish; and certainly it would afford a shelter for the cattle during the oppressive heat of summer. If the thorn would not

answer as a fence, the prickly locust, and several other small trees, indigenous to the country, would make an impenetrable barrier.

Among the objects of culture, maize, or Indian corn, must take precedence, even of wheat: it is prolific beyond comparison, yielding from thirty to one hundred bushels per acre; and is cultivated in the eastern, middle, and western states, though much more successfully in the latter. Maize constitutes the principal food of man in some districts; while it supersedes the growth of the horse-bean, and other plants, which in Europe are essential to the support of animals used in husbandry, or raised for the market. It is, in fact, one great cause of the cheapness of cattle, hogs, and poultry. Wheat, however, the grain so decidedly esteemed above all others, is considered a more valuable crop in the soils adapted to it, and where culture has made the requisite progress; it is the grain generally used for bread, and the best fitted for exportation. In the New England states, the soil and climate do not appear to reward the cultivation of wheat by an abundant produce; and the southern states of the Carolinas and Mississippi have too much moisture, and a climate too tropical. The middle states, Pennsylvania, New York, Maryland, and in the west, Ohio and Kentucky, are the tracts in which this important grain is produced with that excellence which enables it to become a leading article of American export. Rye, for mixing with maize in the common bread, oats for horses, and barley for distillation, are also raised; though the two last not on so great a scale as in the northern countries of Europe.

The cultivation of plants, for their roots, has recently attracted much more of the attention of American agriculturists than formerly. The winters in the northern section of the union, however, are so severe, that turnips can rarely be fed on the ground, and all sorts of roots are with more difficulty preserved and dealt out to stock, in this country, than in those which possess a milder climate. Happily, hay is more easily made from grass in the United States than in Great Britain, owing to the season for hay-making being generally more dry, and the sun more powerful, which renders root husbandry less essential to the prosperity of the American farmer. The different sorts of grasses which are cultivated for hay, grazing, &c. are lucern, sainfoin, burnet, timothy; red, white, and yellow clover; green-sward, blue-grass, crib-grass, &c., according to the section of the union in which they are found respectively to be most advantageous.

Hemp is produced in some parts of the United

* Encyclopædia Americana, vol. i. p. 109.

States. Considerable portions of the lands in the states of Kentucky, Ohio, Illinois, and Indiana, are well adapted to its profitable culture. It may also be grown to advantage in several of the counties of the state of New York, and on the borders of the Connecticut river; or indeed in any of the middle and eastern states, where the soil is composed of a rich loam, or on alluvial bottoms. Kentucky is the only state where it is at present raised in any considerable quantity, and the crop in that state alone has been from five hundred to a thousand tons, which is manufactured chiefly into cotton-bagging, and the coarser kind of ropes, such as bale-rope, &c. Indeed, it is supposed that Kentucky could furnish a sufficient supply for the consumption of the United States. Hemp being an exhausting crop, it has been stated that the best land will not bear a succession of more than three crops; but in Kentucky it has been ascertained by experience, that the land, by being afterwards put into grass, especially clover, will, in three years, be restored to its ability to produce a further succession of three crops of hemp. The quantity obtained from an acre, by the ordinary process of rotting and preparing the hemp, is from 500 to 800 pounds; but when cleared in an unrotted state, it is supposed that the yield will be from one half to two thirds more. The perfection to which machinery for cleaning hemp, both in a rotted and unrotted state, is now brought, warrants the conclusion, that in a short time it will be in general use. The ordinary mode of sowing the seed is considered defective, from the small quantity put into the ground. At present a bushel and a quarter is the usual quantity; but it is said by judicious farmers, that upon rich soil two bushels of seed at least ought to be used to an acre. The hemp of the United States, before rotting, is fully equal to any hemp of foreign growth, the texture of the fibre generally resembling that of St. Petersburg and Archangel; and the finest fibres being fully equal to the best Riga. The average price for Russian hemp is from 230 to 250 dollars per ton, while American (solely from the imperfect manner of rotting it) sells for about 175 dollars per ton. The hemp of the United States is almost invariably what is termed *dew-rotted*, and experience has shown, that cordage made of hemp of this description is by no means so durable as that made of *water-rotted* hemp, and the foreign hemp above mentioned is all of this kind.

Dew-rotted hemp does not contain the tar necessary for the protection of the cordage from the effects of the wet, and without tar it is injuriously affected by the water, in a much greater degree than water-rotted hemp. "In order to make our hemp equal to any of foreign growth," say the manufacturers of New York,* "and to supply its place altogether as far as quality is concerned, nothing further is necessary than that it be water-rotted, or prepared without rotting, if, upon proper investigation, it be found that the machines constructed for that purpose will make the hemp suitable for all kinds of cordage. We have long and anxiously looked forward to an improvement in the culture and preparation of the hemp of our own country, and inquiries, which we have diligently made, have resulted in the conviction, that the expense and difficulties of water-rotting hemp have been much over-rated with us. It was tried upon a small scale in Orange county, in this state, and the experiment resulted very satisfactorily."

Flax is grown extensively; and the seed being highly esteemed for some of the European soils, it forms an export of considerable amount. It is stated that in some instances an acre of land has produced a profit of twenty, and in others of thirty dollars. The manufacture of it, however, seems in a great measure to have been superseded by the use of cotton. Indeed, the same inferiority is found in the quality of this article as in that of hemp, and from a similar cause. "In 1822," states Mr. Travers, the manager of a large factory at Paterson, New Jersey, in his examination before the committee of manufactures,† "I made duck of American flax, but I ascertained from actual experiment, that it would not answer, and that my credit as a manufacturer was likely to suffer, and I abandoned it. I am satisfied that the superior quality of the foreign over the American flax, is to be attributed, almost exclusively, to their preparing it by water-rotting, while in America it is prepared by dew-rotting. In this country too, it is suffered to grow too long, with a view of saving the seed, whilst the foreign is pulled when the bloom falls, and before the bole is formed. I conceive the difference between American flax, pulled when the blossom falls and water-rotted, and that which is pulled after it has seeded and dew-rotted, would be fifty per cent. better to the farmer and to the manufacturer, estimated upon the present prices. The

* Report of the Committee of Agriculture, in relation to American canvass, cables, and cordage, presented to the house of representatives, on the fifth of January, 1825.—As an instance, among a multitude of similar facts, of the interest congress takes in promoting the agricultural, as well as commercial interests of the union, it may be observed, that of this report, (No. 381,) which

contains a mass of information on this subject, important both to the grower and the manufacturer, six thousand copies were printed by order of the house, for distribution.

† Report (No. 115) presented to the house of representatives, January 21, 1828, p. 136.

one gains that much by the quantity and quality of the article, and the latter can afford to give that much more for it that it is now worth to him. Flax pulled at this time will weigh thirty-three and a half per cent. more than when suffered to go to seed."

The animals, either employed in agriculture, or reared for food, are very similar to those of Great Britain. In the southern, middle, and western states, much attention is paid to the breeding of horses. British race, and also Arabian horses, have been imported, to improve the breed of this animal. Neither the intense cold of winter in some of the states, nor the excessive heat of summer in all the states, appear much to distress the horse in America. Some of the American horses are likewise very fleet; the races in New York, Virginia, and South Carolina, prove that the swiftness of the American horse equals that of the British. There are none of those very heavy cart-horses which we have in the British sea-ports. The cow in general use is about the size of the Devonshire one, giving five or six quarts of milk at each milking. The Holderness cow, and other large breeds, would certainly not suit the United States; they are more adapted to a humid climate. It has been said that all animals dwindle in size in this country, a statement certainly very incorrect. If the same care be taken there in the breeding and feeding of horses and other animals as in England, there is not a doubt that the animal would attain an equal size or weight. Bullocks have been fed in America, weighing 2000 to 2500lbs.; hogs, 800 to 1400lbs. Sheep do not appear to succeed so well as oxen and swine. The mutton is not so good or fine-flavoured as the English, and it is frequently sold at half the price of beef. It is probable that proper attention is not paid to this animal; for it is healthy, not subject to the rot, or to many diseases which are prevalent in England. Mutton is not esteemed by the inhabitants for the table, and the sheep is principally reared for the wool, for which the demand has recently much increased. Poultry of all kinds is abundant and good, but the climate does not seem to suit the rabbit.

The implements used in agriculture in most points resemble those of Great Britain. Circumstances however require variations, which the sagacity of the American cultivator will lead him to adopt, often in contradiction to the opinions of those who understand the science better than the practice of husbandry. In Europe, land is dear and labour cheap; but in the United States the reverse is the case. The European cultivator is led, by a regard to his own interest, to endeavour to make the most of his land;

the American cultivator has the same inducement to make the most of his labour.

The principal products of the southern states are tobacco, cotton, rice, and sugar. The first of these indeed is grown largely in Virginia and other of the middle states, and, together with the cultivation of wheat, has enabled many of the proprietors to amass considerable wealth; though, from the low price of tobacco, it is said now to be a speculation often attended with loss. In common with the other plants which thrive in the warm climates of the southern states, tobacco is cultivated almost exclusively by slave-labour: it is raised in the same manner as cabbages are in England, only planted at a greater distance. A bed is made as early in the spring as possible, generally in a wood, as no kind of animal will touch or eat the plant; they seem even to avoid treading upon it. The preparation is by felling the timber, and burning the tops on the place intended to be sown with seed; to raise the plants, the seed being small, the ground is hoed up, and the ashes and earth mingled together as fine as possible. New land is preferred, and treated in the same manner as that for the seed-bed: if old land, it is very highly dunged, or cow-penned, which is by folding the cattle at night on a small piece or patch of ground, as sheep are folded in England; and the latter mode is preferred to the former. The ground is then ploughed, and made fine by the harrows, in the same manner as for turnips in England. That being done, the plants are set; after which it is very common, if the man has sheep, to keep them in the fields to eat the weeds; even cattle are kept in the field for that purpose. Before the plant is set, the earth is generally drawn up into hills with the hoe, at the distance of three feet asunder, and dung put into them. It is said by the planters, that an industrious black man or woman will manage three acres. There is a caterpillar, or beautiful worm, more than an inch and a half long, of such a devouring nature, that if it be not observed every day, it soon spoils a great number of plants; therefore the plants are searched over every day, which is one cause of the three acres being set off to every planter. The culture of tobacco exhausts the land to such a degree, that it will only sustain two, or, at most, three crops. The entire process employs the negroes during the whole year: preparing the land in March and April; planting in May, hoeing and overlooking in June, July, August, and September, cutting and housing in October; the other months, in moist weather, to be pulling the leaves off the tobacco-stalks, and preparing them for market; in frosty weather in clearing the

wood off, to plant new land the next year, and cutting the wood for rails, fire, &c. The following description of the mode of preparing tobacco for exportation is given by a recent traveller in the United States. "A party of a dozen negroes, on the floor of a tobacco-house, were placed, men, women, and children, in a circle, drawing the leaves from the stalk. In the centre stood two men, who, on receiving the leaves from the pickers, distributed them in heaps according to their quality. There seem to be three qualities of tobacco. The lower leaves, or those which touch the ground, are liable to get dirty and torn; but on the higher parts of the same stalk two different sorts of leaves are found, one yellow and one brown. These being carefully separated, and made up into little bunches, somewhat thicker than a man's thumb, are tied round with a thong formed out of the leaf itself. The bunches are then slung in pairs, across bars of wood, stretching from side to side of the roof, not unlike herrings in a drying-house. In the course of time, the house becomes so completely filled with these bars carrying bunches of tobacco, that there is barely left space enough for a man to creep under them to trim the fires, kept constantly burning on the mud floor to dry the leaves. The next process is to pack it into the large hogs-heads which every one has seen before the door of a tobaccoist's shop. This operation is performed by means of long levers worked by hand, which force it into a compact mass."

The cultivation of cotton is conducted in a manner very similar to that of tobacco. It is an annual plant, growing to a considerable height, and has leaves of a bright green colour, marked with brownish veins, and each divided into five lobes. The flowers have only one petal in five segments, with a short tube, and are of a pale yellow colour, with five red spots at the bottom. The cotton-pods are of somewhat triangular shape, and have each three cells. These, when ripe, burst open, and disclose their snow-white or yellowish contents, in the midst of which are contained the seeds, in shape somewhat resembling those of grapes. The fibres of cotton are extremely fine, delicate, and flexible. When examined by the microscope, they are found to be somewhat flat, and two-edged, or triangular. Their direction is not straight, but contorted, so that the locks can be extended or drawn out without doing violence to the fibres. These threads are finely toothed, which explains the cause of their adhering together with greater facility than those of *bombax* and several *pocynæ*, which are destitute of teeth, and which cannot be spun into thread without an admixture of

cotton. In the southern states of the Union, the cotton cultivated is distinguished into three kinds—the nankeen cotton, so called from its colour; the green-seed cotton, producing white cotton with green seeds; and the black-seed cotton. The first two kinds grow in the middle and upper country, and are called short-staple cotton; the last is cultivated in the lower country, near the sea, and on the isles near the shore, and produces cotton of a fine, white, silky appearance, very strong, and of a long staple. Cotton appears to have been found indigenous in America; but for a long period after it had been grown in some of the southern states, it seems to have been consumed in domestic use, and none exported; indeed, the factories at this time were supplied with a foreign article. When, in 1784, a small quantity of cotton was imported into Liverpool, in a vessel from the United States, it was, at first, considered as an illegal transaction, as it was not supposed possible for it to have been the growth of any of the states of the Union; and when, about the same period, a duty was proposed in the United States Congress on the import of foreign cotton, it was declared by one of the representatives from South Carolina, that the cultivation of cotton was in *contemplation* by the planters of South Carolina and Georgia, "and that if good seed could be procured it might succeed." How rapidly this produce must have risen in amount, and what wealth must have been accumulated by its cultivators, may be supposed, when it is stated that the crop in 1824-5 was 369,259 bales; that of 1825-6, was 720,027 bales; of 1826-7, 957,281; of 1827-8, 720,593; of 1828-9, 870,415. This rapid increase of production has been attended by proportionate diminution of price, which averages only about one third what it did formerly: "Low as the price has sunk, however," says Mr. Everett,* "there is good reason to think it still, with thrift and economy, a profitable branch of industry. I have been lately favoured with a minute statement of the average product of five or six cotton plantations in two of the south-western states, ascertained by putting together the income of a good and a bad year. The result of this statement is, that the capital invested in these plantations yields from fifteen to twenty per cent. clear; and that the net profit accruing to the proprietor, for the labour of each efficient hand, is 237 dollars 50 cents per annum; being a clear gain of 4 dollars 50 cents per week. It further appears, that on one of these plantations, (and the same, though not stated, is believed to hold of the others, in due

* Address delivered before the American Institute of the city of New York, at their fourth annual fair, October 14, 1831, p. 40.

proportion) worth altogether, for land, labour, and stock, 92,000 dollars, the entire amount of articles paying duty annually consumed is 2,300 dollars. The average crop of this plantation, taking a good and bad year, is 14,500 dollars.—Suppose the duties to be thirty-three and a half per cent., and the whole amount of the duty to be actually assessed, in the shape of an enhanced price of the article, (the contrary of which is known to be true, for in several articles the entire price is little more than the duty,) it would amount to less than 730 dollars per annum, or a clear profit of 14,000 dollars. The great wealth of the south is, of course, the product of the labour there performed. The productiveness of this labour must greatly depend on the cost at which it is sustained. This cost must consist chiefly of that of food and clothing. Food is subject to no duty, nor is there any duty, which, except in the most remote and indirect manner, can enhance its price. The annual cost of clothing in the south-western states,—probably in all the states south of 35°,—is said to be eight dollars per head. Suppose this supply to come enhanced one third, it is a very small sum when assessed upon the annual product of the industry of the labourer. These statements are furnished to me on the very highest authority. There is no reason why the plantations, to which they refer, should be more productive than others in their neighbourhood, except as they may be conducted with greater skill and prudence. But there never existed, and never will exist, any branch of industry, which, in the long run, will be profitable in any but skilful and prudent hands.” There are two machines for cleansing cotton from the seeds; these are the roller-gin and the saw-gin. The essential parts of the first are two small cylinders, revolving in contact, or nearly so. The cotton is drawn between the rollers, while the size of the seeds prevents them from passing. The saw-gin, invented by Mr. Whitney, is used for the black-seed cotton, the seeds of which adhere too strongly to be separated by the other method. It is a receiver, having one side covered with strong parallel wires, about an eighth of an inch apart. Between these wires pass a number of circular saws, revolving on a common axis. The cotton is entangled in the teeth of the saws, and drawn out through the grating, while the seeds are prevented, by their size, from passing. The cotton thus extracted is swept from the saws by a revolving cylindrical brush, and the seeds fall out of the bottom of the receiver.

Rice is cultivated extensively in the southern states, by a method somewhat similar to that of garden peas in this country. The grains of this plant

grow on separate pedicles, or little fruit-stalks, springing from the main stalk. The whole head forms what a botanist would call a spiked panicle; that is, something between a spike like wheat, and a panicle like oats. The grain is sown in rows, in the bottom of trenches, made by slave-labour entirely. These ridges lie about seventeen inches apart, from centre to centre. The rice is put in by the hand, generally by women, and is never scattered, but cast so as to fall in a line. This is done about the 17th of March. By means of floodgates, the water is then permitted to flow over the fields, and to remain on the ground five days, at the depth of several inches. The object of this drenching is to sprout the seeds, as it is technically called. The water is next drawn off, and the ground allowed to dry, until the rice is risen to what is termed four leaves high, or between three and four inches. This requires about a month. The fields are then again overflowed, and they remain submerged for upwards of a fortnight, to destroy the grass and weeds. These processes occupy till about the 17th of May, after which the ground is allowed to remain dry till the 15th of July, during which interval it is repeatedly hoed, to remove such weeds as have not been effectually drowned, and also to loosen the soil. The water is then, for the last time, introduced, in order that the rice may be brought to maturity; and it actually ripens while standing in the water. The harvest commences about the end of August, and extends into October. It is all cut by the male slaves, who use a sickle, while the women make it up into bundles. As it seems that no ingenuity has yet been able to overcome the difficulty of threshing the grains out by machinery, without breaking them, the whole of this part of the process is done with hand-flails in a court-yard. The next process is to detach the outer husk, which clings to the grain with great pertinacity. This is done by passing the rice between a pair of mill-stones, removed to a considerable distance from each other. The inner pellicle, or film, which envelopes the grain, is removed by trituration in mortars under pestles weighing from 250 to 300 pounds. These pestles consist of upright bars, shod with iron, which being raised up by the machinery to the height of several feet, are allowed to fall plump down upon the rice, the particles of which are thus rubbed against one another till the film is removed. It is now thoroughly winnowed, and, being packed in casks holding about 600 pounds each, is ready for distribution over all parts of the world.

The extraction of sugar from the maple has already been described, but that from the cane far sur

passes it in amount, and will probably soon supersede it altogether as an article of sale. The sugar-cane is extensively cultivated in Louisiana, Georgia, and West Florida. Five kinds of sugar-cane are cultivated in Louisiana. 1st. The cane called Creole cane. It is supposed to have come originally from Africa; its stalk rises vertically, the joints are closer than in the other kinds, and it is not so long and thick; its leaves also are vertical, and remarkably lanceolated; it requires as much labour as the cane of Otaheite; it is, of all the five kinds, the one that is most exhausting to the earth, so that, after a few years, the land on which it has been cultivated is so impoverished, that it becomes necessary to substitute cane of another kind. The sugar it produces has more strength or body than that from the others; it is, consequently, preferable for exportation, and suffers less waste by dripping, in crossing the sea. 2d. The cane from Otaheite, called Bourbon cane. The stalk is thicker than that of the other kinds, and longer than that of the Creole cane; the joints are further apart, the leaves broader, of a lighter colour, turning over, and hanging towards the ground. The roots branch out less than those of the Creole cane, and it is more liable to be thrown down by the wind. The eye or bud of this cane is very small, and so flat as to be difficult to judge of its quality. It is the most watery of all, and consequently not suitable for new land; it succeeds better in an old soil, provided that it be well ploughed. Cultivated in this way, the Otaheite cane is the one that produces the most sugar. It suffers less from the cold than the Creole, but it is more tardy in coming up; yet, when it has started, its vegetation is more rapid than that of the others. The plants are not so easily preserved, and it must be replanted every year. It is admitted that the sugar it produces has less body than that from the others. 3d. The riband cane, green and red. 4th. The riband cane, green and yellow. These two species of cane grow rapidly; their stalks are as high as those of the Otaheite cane, and a little less thick; the joints very far apart, as in that cane; the eyes more prominent and larger; the leaves are more bushy on the top of the cane, which exposes it to be prostrated by the wind; but this accident is little to be dreaded in these canes, because it does not germinate so easily; whilst, in the other species, the buds, in being brought in contact with the earth, vegetate speedily, which changes the sap, and injures the production of the sugar. The green and red riband cane comes up earlier than any other; it is peculiarly adapted to newly-cleared land and low grounds; it is the most vigorous, the easiest to pre-

serve as a plant, the one that bears the most cold, and the culture of which requires the least labour; but, by reason of the thickness of its bark, it requires a stronger pressure than any other to extract the juice; and steam power alone can produce the degree of pressure necessary to avoid a considerable loss of the saccharine matter. The sugar that this cane produces possesses body, is easily made, and gives less molasses than that from any other. The green and yellow cane bears a considerable resemblance to the Otaheite; it is almost as watery, and is not hard; but it seems to be the general opinion, that the plants are more easily preserved; its stalk is larger than that of the green and red riband; it is late in coming up, like the Otaheite cane, withstands the cold at least as well, and appears equally suited to lands somewhat exhausted by cultivation. 5th. The violet cane of Brazil. This plant was introduced in Louisiana in or about 1806, but it was soon abandoned, the planters having found that in the climate of the United States it is much less productive than any of the others. The Creole, the Otaheite, and the riband canes, are at present the only ones cultivated in Louisiana, and are the best suited to the nature of the soil. They are all more or less affected by the variations of the atmosphere, are very sensible to cold, and are killed in part by the frost every year. They are also exposed to other injuries, which renders the culture very expensive.

Experience has shown that the cane may be cultivated in a latitude much colder than was generally supposed; for fine crops are now made in Louisiana, in places where, a few years ago, the cane froze before it was ripe enough to make sugar. In the process of cultivation, the ground is ploughed as deep as possible, and harrowed: after it has been thus broken up, parallel drills or furrows are ploughed at the distance of two feet and a half to four feet from one another; in these the cane is laid lengthwise, and covered about an inch with a hoe. Small canals to drain off the water are commonly dug, more or less distant from each other, and these are crossed by smaller drains, so as to form squares like a chess-board. These ditches are necessary to drain off the water from rains, as well as that which filters from the rivers, which would otherwise remain upon the plantations. The average quantity of sugar that may be produced upon an acre of land of proper quality, well cultivated, is from 800 to 1,000 pounds, provided that the cane has not been damaged, either by storms of wind, inundations, or frost. The strong soil is easiest of cultivation, and most productive in rainy seasons. The light soils require less

labour, and yield more revenue in dry seasons. To these variations others are to be added, resulting from the different exposure of the lands, the greater or less facility of draining, and also from the greater or less quantity of a weed, known by the name of coco or grass nut. Sixty working hands are necessary to cultivate 240 acres of cane, planted in well-prepared land, and to do all the work necessary until the sugar is made and delivered. The sugar, up to the moment it is delivered to the merchant, costs the sugar-planter about three and a half cents per pound for expenses incurred, without reckoning the interest on his capital.*

It will give our readers great satisfaction, however, to find that this article can be raised without the absolute necessity of employing slaves, which has been by some so strongly contended for. Mr. Coxe, in his "Statement of the Arts and Manufactures of the United States," undertaken by the direction of congress, observes, "This new mode of managing sugar lands appears to be worthy of particular attention and statement. Instead of the employment of slaves requiring a very burdensome advance of capital, and an expensive subsistence, the occasional labour of neighbouring, transient, hired white persons, is often used to prepare the grounds with the plough and harrow, to plant the new canes, to dress the old ones, and to clear the growing plants from weeds. The same or other white labourers are afterwards employed by the planters to cut, and stack under cover, the ripened canes, so as to prepare them for the grinding-mill and boiler. The operation of planting occurs after the sickly autumnal season, and before the vernal; and the operation of cutting also occurs in the healthy season, at the end of the following autumn. The service is therefore not unhealthy. It is considered to be expedient that the planters who own, and they who cultivate the soil, should not expend great sums in the establishment of mills and sets of works, on all the sugar estates, after the manner of the West Indian colonies of the European states. But it is found much more convenient and profitable, to leave the business of grinding and boiling to one manufacturer of muscovado sugar, for a number of planters. These persons, like the owners of grain-mills and saw-gin mills, can be employed for a toll in kind, or part of the produce, or for a compensation in money. By this method, a tract of three miles square, or three hundred and twenty perches square, which would contain twenty-five plantations of above one hundred and two acres each, may be accommodated by one cen-

tral manufactory of muscovado sugar from the cane stalks; for none of these plantations will be more distant from the boiler than a single mile; a mere city portorage or cartage. Refineries for making white sugar, and distilleries, may be added, and the economy and accommodation to the planters will be more complete. The effect of this division of labour and ownership will be, rapidly to bring into the most complete and productive cultivation, all the canelands in the United States, and to advance the various manufactures of this valuable and wholesome agricultural production. The easy and cheap maintenance of cattle, the abundant supplies of provisions and building materials for man and beast, and the redundancy of fuel and cask lumber, with the benefits to our planters from being more frequently and comfortably their own stewards and overseers, will greatly redound to their convenience and profit."

Indigo was formerly an object of very extensive cultivation, but the growth of it was generally abandoned when cotton became the great staple of the south. It is still produced, however, in some of the southern states, but not to any very great extent, the exportation amounting only to a few thousand or sometimes only a few hundred dollars annually, while it is imported to a large amount.

The cultivation of the mulberry tree, and the raising of silk-worms, have occupied a considerable and increasing portion of attention in the United States, and may be considered as a branch of agriculture the least pre-occupied, and the most open to energetic pursuit, that the country affords. Before the revolution, attempts to produce silk were made in Georgia with some success; but circumstances were unfavourable, and ultimately they were abandoned. Sewing-silk, indeed, has been made for upwards of seventy years, and still continues to be made, in the state of Connecticut, and in some other parts of the Union; but this silk is of so inferior a quality that it not only can not be exported abroad, but can not even find a cash price in the domestic markets. It is disposed of in barter among the farmers, and is acknowledged not to be fit to compete with the same article imported from Europe, which still continues to be imported. The reason of this is not the want of ingenuity in the females, who, it is understood, exclusively attend to this manufacture, but to their ignorance of the art of preparing this precious material, an art which can only be acquired by experience and practice, and which must be taught by a person fully skilled in it. Such persons are not to be ob-

* Answer of the Central "Committee of the Sugar Planters of the State of Louisiana," contained in a "Letter from the Secreta-

ry of the Treasury," presented to the house of representatives, January 21, 1831.

tained from foreign countries without the greatest difficulty. In several parts of the country, however, this important branch of agriculture is now more or less attended to. Societies of various kinds have been established for its promotion. With the same views, acts of incorporation have been granted by the state legislatures, and the national government themselves have not thought this object unworthy of their special patronage. The works of foreign authors on these interesting subjects issue in translations and abridgments from the press; manuals, and even periodicals, are published by American authors, all tending to produce the same result—the introduction of silk as a profitable object of culture into that country. During the year 1829, a series of essays were written by M. D'Homergue, the son of an eminent silk-manufacturer, at Nismes, who had arrived in Philadelphia at the instance of an association for the promotion of the culture of silk; they have since been published in a separate form, and will well repay the perusal of those who may feel peculiarly interested in the subject.* The report of the "Committee of Agriculture," who were instructed "to inquire into the expediency of adopting measures to extend the cultivation of the mulberry-tree, and to promote the cultivation of silk by introducing the necessary machinery," &c. made to the house of representatives, March 12, 1830, states these essays, and the facts contained, to be entitled to high confidence. "It appears from them," states the report, "that American silk is superior in quality to that produced in any other country:—in France and Italy, twelve pounds of cocoons are required to produce one pound of raw silk, whilst eight pounds of American cocoons will produce one pound of raw silk:—that cocoons cannot be exported to a foreign market from several causes,—their bulk, their liability to spoil by moulding on ship-board, and because they cannot be compressed without rendering them incapable of being afterwards reeled. It is further demonstrated in these essays, and in a memorial lately presented by the manufacturers of silk stuffs of Lyons, in France, to the minister of commerce and manufactures, that the art of filature can only be acquired by practical instruction, by some one intimately acquainted with, and accustomed to, that process; that no human skill or ingenuity, unaided by practical instruction, is capable of acquiring that art, to any profitable extent. It is made manifest, that, although the culture of silk has been carried on for many years in some parts of the United States, and more particu-

larly in Connecticut, it has been conducted very unprofitably, compared with what the results might have been, if the art of filature had been understood. The sewing-silk made in Connecticut is from the best of the silk, and is, after all, quite inferior to that of France and Italy; in these latter countries, sewing-silk is manufactured from imperfect cocoons, or from refuse silk. It appears also that, unless the silk is properly reeled from the cocoons, it is never afterwards susceptible of use in the finer fabrics. It is a gratifying consideration that the benefits from the culture of silk, and the acquisition of the art of reeling the same, will be common to every part of the United States. The climate of every state in the union is adapted to the culture of silk; hatching the eggs of the silk-worms may be accelerated or retarded, to suit the putting forth the leaves of the mulberry. That tree is easily propagated from the seeds of the fruit, and is adapted to almost any soil. The committee regard the general culture of silk as of vast national advantage in many points of view. If zealously undertaken and prosecuted, it will, in a few years, furnish an article of export of great value; and thus the millions, paid by the people of the United States for silk stuffs, will be compensated for by the sale of our raw silk. The importation of silk, during the year which ended on the 30th of September, 1828, amounted to 8,463,563 dollars, of which, 1,274,461 were exported; but, in the same year, the exportation of broad stuffs from this country amounted only to 5,414,665 dollars, leaving a balance against us of nearly two millions. The committee anticipate that, at a period not remote, when we shall be in possession of the finest material produced in any country, the manufacture of silk stuffs will necessarily be introduced into the United States. The culture of silk promises highly moral benefits, in the employment of poor women and children in a profitable business, while it will detract nothing from agricultural or manufacturing labour. The culture of silk will greatly benefit those states which have abundant slave-labour, the value of whose principal productions, particularly in the article of cotton, has been depressed by over production."

The first object to be obtained is undoubtedly the preparation of an abundant supply of food for the worms, which may be effected at a very small expense. There are two different species of mulberry,—the black, which is cultivated for its excellent fruit, of a dark purple colour, almost black; and is a tree of slower growth than the white; the leaves are larger, of a darker green, thicker and stronger. The silk-worms will eat them for the want of better, but they

* Essays on American Silk, &c. by John D'Homergue and P. S. Duponceau. Philadelphia: 1830.

TOPOGRAPHY OF THE UNITED STATES.

do not thrive upon them, and the silk is coarse and inferior. The white mulberry-tree bears a white or light pink fruit, and its leaves are the most congenial food for these precious insects; is of a quicker growth, and does not come to so large a size as the black. The white mulberry is a very hardy tree, and bears the severest winters without any apparent injury; will last a great many years, and if cut down close to the ground, will send up many suckers all around, and resist destruction for several years. There are many kinds of white mulberry, the leaves of which differ in point of merit as a food for the silk-worm. Some are of a small size, earlier, and more tender; and, on that account, are cultivated as the most proper for the worms when first hatched; others are large, and of a peculiar quality, which suit the taste of the worms, upon which they thrive best, and make the handsomest silk. The best plants for earliness and superiority of leaves should be set out and noted, as they may hereafter furnish scions for grafting. Upon a dry soil the mulberry-trees do not grow much taller than the largest peach-trees; but they are stouter and thicker set. Their roots, which are of a remarkably bright gold colour, (that of silk,) extend to a considerable distance; and they ought not to be planted on that account nearer than thirty feet from tree to tree. As the gathering of leaves too soon would injure the growth and constitution of the trees, we would recommend that no leaves should be gathered from them until after the fifth year. In the mean time, plantations may be made for immediate use, by sowing the seed in drills, at a convenient distance, planting beans or potatoes between, to keep the ground clear of weeds. The second year after sowing, these seedlings might be cut down with a sharp instrument, three or four inches from the ground, and would give a second crop the same season. In the silk countries, they raise seedlings in rows for the first feeding of the worms: these young plants putting out their leaves earlier than the old trees, and being more tender, are better adapted for the worms in the first stage of their existence. They also plant the mulberry-trees, and suffer them to grow according to unrestrained nature, branching out from the ground, for the convenience of gathering the leaves more easily, and making a food stronger than the seedlings. They consider the leaves from trees, regularly trained, with a single butt, and of several years growth, to give the most substantial food. The white mulberry thrives in all soils and situations, and will grow very rank and full of leaves upon low, moist ground; but the food it affords in such situations is very inferior, and apt to disorder the worms. A warm loam,

even if gravelly, will give leaves of the best quality, and a sheltered warm situation will produce leaves many days sooner than one which is exposed to cold; and is desirable on that account. The mulberry-tree may be raised from suckers: sometimes slips, planted in a moist soil, will take root; and if the low branches of a tree can be bent so as to be fastened and covered in the ground, they will take root. The trees may be planted near buildings for shade, or in a yard; the fowls are very fond of the fruit when it falls. A variety of situations will increase the means of early and late feeding, which is very desirable. The most esteemed seed of that tree in Europe is that raised in Piedmont. The seed from Spain is also excellent. The seed of the best quality is large, bright, and heavy; when bruised it will appear oily, and when thrown on ignited coals, it will crackle.

It would be superfluous here to give detailed instructions respecting the best methods of raising the silk-worm and winding the silk. Volumes have been written by Dandolo and others on this important subject; but every needful information may be obtained from the article on this subject in the *New American Gardener*, by T. G. Fessenden; from the *Essays* already referred to; and from the *Philadelphia Silk Society*. Persuaded that we are concurring in promoting both national and individual benefit, by extending in any degree the circulation of appeals on the importance of this subject, we shall conclude with an extract from the first of the above publications: "Fully aware of the importance of the object we have presented to the attention of the community, we cannot leave it without making a concluding appeal to the intelligence and energy of our countrymen, not to suffer any delay to take place in setting their hands to a work so promising of results the most favourable to our comforts, and for our welfare: the first step is within the farmers immediate department, to sow the mulberry-seed, and rear the young trees; and after two years of attendance, the silk raising may commence in good earnest, and will become a healthy and pleasant business for children and young women. This rich crop will require but two months care to secure it, and when the business shall flourish on a large scale, which we may anticipate as probable within a short period, the raising of the cocoons will become a distinct occupation for farmers' families; the winding and reeling of them, most probably, will be carried on as a distinct and separate branch of industry; this is actually the case in all the silk-growing countries, where the cocoons are carried to the public markets, and sold for ready cash to those who keep filatures, where they wind and reel them. Great

advantages will accrue to the younger members of farmers' families in cultivating so pleasant and profitable an employment at home: it will offer to many young women a choice between home and the factories, and a resource in case the liberal encouragement given to manufactures should eventually prove the cause of business being overdone; it will also offer valuable resources for the pauper establishments, where the old and infirm, under a discreet and judicious government, may be made to provide themselves a comfortable support. If we take a retrospective view of the affairs of mankind, since the times of early record, we find that the riches and the prosperity resulting from commerce and navigation, or from a system of extensive manufactures, however brilliant, are comparatively of short and uncertain duration; the changes of views and systems of a government at home, the changes of policy among foreign nations, render the whole fabric subject to many sudden and unforeseen vicissitudes, and dependent upon the results of relations abroad, and of the compromise of jarring interests at home, setting at defiance, in the course of time, the subtle calculations of the most accomplished statesman; but the prosperity which is founded upon a perfected agriculture, that combines with intelligence the abilities of the soil and climate, so as to naturalize, by industry, rich crops of products, unknown to its original situation, is a prosperity not liable to changes; it becomes inherent and lasting."

By the latest intelligence that has been received on this interesting subject, there appears every reason to believe that the difficulty in winding the silk will speedily be overcome. The indefatigable and patriotic advocate of this branch of national wealth, M. Du Ponceau, with the assistance of M. D'Homergue, has already made considerable progress in instructing young females in the art of winding, and they have, in the midst of the obstacles by which they were surrounded, succeeded in producing about fifty pounds of raw silk in marketable condition; part of which has been manufactured into a national flag, and presented to the house of representatives.*

The vine grows in most parts of the United States, and yields a plentiful return for the labour of cultivation. A few years since a number of Swiss settlers at Vevay, in Indiana, commenced the cultivation of the grape on a large scale, an example which has been followed in many parts of the west. The vicinity of Vevay still boasts the largest vineyards in the United States. "We have witnessed nothing in

our country," says Mr. Flint,† "in the department of gardening and cultivation, which can compare with the richness of this vineyard in the autumn, when the clusters are in maturity. Words feebly paint such a spectacle. The horn of plenty seems to have been emptied in the production of this rich fruit. We principally remarked the blue or Cape grape, and the Madeira grape. The wine of the former has been preferred to the claret of Bordeaux. The fruit seems to have a tendency to become too succulent and abundant. It is now supposed that some of our native grapes will more easily acclimate to the country and soil, and make a better wine.—These amiable, industrious, and intelligent people, are constantly profiting by the benefit of experience, and this species of agriculture already yields them a better profit than any other practised in our country, while they are every year improving on the vintage of the past." A large grant of land, in the territory of Alabama, was made by the general government to a French association under M. Villar, for the purpose of encouraging the cultivation of the vine and the olive. About 270 acres had been occupied with vines in 1827, and nearly 400 olive trees had been planted. The latter, however, do not thrive, and it is apprehended will not attain an available degree of perfection in that climate, as the tree is perished to the roots by every winter's frost, although fresh shoots appear every spring.‡

Horticulture has not been overlooked in the United States; although, amidst the bustling pursuits and profitable occupations of the agriculturist, the manufacturer, and the merchant, it has not received that general attention which is evinced in our own country: those, however, who, either from views of pleasure or of gain, have devoted their time to the culture of the garden, have not had to complain of an unsuccessful or unprofitable pursuit. Some idea of the variety of fruits and of flowers which the climate will admit of, may be formed from the following statement of the contents of a garden in the neighbourhood of Philadelphia, which may be relied on as authentic, being extracted from the report of the committee appointed by the Pennsylvania Horticultural Society for visiting the Nurseries and Gardens in the vicinity of that city:§ "Here are to be found," say the committee, "one hundred and thirteen varieties of apples, seventy-two of pears, twenty-two of cherries, seventeen of apricots, forty-five of plums, thirty-nine of peaches, five of nectarines, three of almonds, six of quinces, five of mulberries, six of rasp-

* Twenty-first congress, second session, report No. 7.

† Geography and History of the Western States, vol. ii. p. 149.

‡ Report made to the secretary of the treasury, Dec. 24, 1827.

§ Hazard's Register of Pennsylvania, vol. vii. p. 106.

berries, six of currants, five of filberts, eight of walnuts, six of strawberries, and two of medlars. The stock, considered according to its growth, has in the first class of ornamental trees, esteemed for their foliage, flowers, or fruit, seventy-six sorts; of the second class, fifty-six sorts; of the third class, one hundred and twenty sorts; of ornamental evergreens, fifty-two sorts; of vines and creepers, for covering walls and arbours, thirty-five sorts; of honeysuckle, thirty sorts, and of roses, eighty varieties."

There are, however, considerable difficulties to be overcome in this pursuit, arising from the sudden transitions of temperature, long periods of drought, and the tremendously heavy rains which wash away the soil. To avoid, as much as possible, the first of these evils, a situation sheltered from the north and northwest winds should be selected; to meet the second, the vicinity of a perennial stream will of course, if possible, be sought; and to prevent the third, a level plat, free from any considerable undulations, should be preferred.—Our limits do not admit of our entering into a detail of the various species of trees and plants suitable for cultivation. The quotation we have made will prove that most of the fruits and flowers of Europe may be raised in the transatlantic republic. Peaches flourish in such abundance, that in many cases they furnish food for swine; and apples are no less plentiful, the finer sorts being considered superior to those produced in Europe.* Large quantities of cider are manufactured, and this is an article that, in a great measure, supersedes the use of malt liquor. On the other hand, some of the vegetables most esteemed in the old world are difficult to raise, and inferior, in the new; as is the case with the potato, which, in quantity and in flavour, is far inferior to the Irish. Notwithstanding the difficulties we have mentioned, and the inferiority of some productions, we are compelled to admit, that the balance is in favour of the American horticulturist, and we believe that there are few branches of business in which an industrious English emigrant, well acquainted with the principles of gardening, would find more profitable employment.

The English editor of this work, probably, had not the means of getting correct information on the subject of the horticulture of the United States. It has been more attended to than he imagines: It would be difficult for any one, at present, to go into the minutiae of this culture, as much more has been done than has been recorded, ample and satisfactory as are the volumes of the Berkshire Horticultural Society, as also those of the Society of Pennsylvania, the Transactions of the Society of Arts of New York,

and of the Agricultural Board of that State, &c. &c. Professor John W. Francis, a distinguished physician of the city of New York, and an able contributor to works in almost every branch of science, has touched upon this subject, in an address delivered in September, 1829, before the "New York Horticultural Society," with his usual felicity. After having dwelt upon the importance of horticultural studies, and the attention which the science has received in Europe, by the most eminent men who have adorned the annals of philosophy, he notices the condition of this branch of human pursuit, in this country, as follows:—

"Turn we," says Professor Francis, "from ancient and venerable Europe, to the fresh and verdant fields and ever-during forests of America. What accession has been made to the treasures of the vegetable and mineral kingdoms, what resources of the forests by the discovery of the new world, we can only in part conjecture. The extensive and well directed labours of Humboldt and Bonpland, give us some idea of the latent stores of nature; and an inference may be made, when we are told that the number of vegetable species collected in Brazil, and now in the hands of European botanists, is estimated at 14,000, of which number, not more than 500 were known at the commencement of the present century. We have good reason to conclude that the north has not withheld her proportion.

"Our demonstrative proofs may be found by an examination of the Floras of Pursh, of Bigelow, of Torrey, of Muhlenburgh, of Barton, of Elliot, and of Nuttall, with the species Plantarum of Linnæus.

"The colonial condition of this country prior to the revolution, was little favourable to the promotion of agriculture, or the cultivation of the arts. Accustomed to look up to the mother country as the seat of science, and the arbiter of her destiny, as well as for protection, the provident arts were neglected; and indeed, England could scarcely be supposed desirous of encouraging pursuits which would render her colonies less dependent. Nevertheless, we find that at even an early day, France, Spain, Holland, and England, sent out to this country men of science, to explore the vegetable and mineral riches of the Americans. The names of La Hontan, Herrera, Hennipen, Clavigero, Clayton, Catesby, the elder Michaux, Vanderdonk, Kalm, Wangenheim, Pownall, Schoepf, Coxe, Bannister, will at once occur.

"The testimony of these able and enlightened writers, is most respectful to the variety and value of the productions of America, and amply vindicates the equality of the western to the eastern hemisphere.

It was the good fortune of many of these eminent travellers, to find in their journeyings, kindred spirits, with souls like their own, alive to the wild and novel scenes of nature; who looked upon the objects which surrounded them, not merely as matters of curiosity, but of taste, of benefit to the arts culinary and remedial, of service in rural affairs and domestic economy. Hence to investigation of properties, the practicability of foreign naturalization became a subject of great consideration. To facilitate researches and inquiries of this kind, who could more advantageously be consulted than Mitchell, Clayton, Jefferson, and Walter, of Virginia; Garden, of South Carolina; Boardsley, of Maryland; Logan, Marshall, Bartram, Hecke-welder, and Rush, of Pennsylvania; Colden and Livingston, of New York; Humphreys, of Connecticut; Holyoke and Cutler, of Massachusetts; and Belknap, of New Hampshire.

"In this reciprocity of intellectual pursuits, we find much to illustrate the history of the tobacco, the cotton plant, the sugar cane, the indigo, and many of our most efficient medicinal remedies derived from the vegetable kingdom. See further, the catalogue of plants which may be useful in America, drawn up by Ellis, the agent for West Florida, but whose services are, perhaps, better known to us, by his discovery of the art of preserving seeds during long voyages. These practical philosophers seem, without the lights of modern political economy, to have well understood, that the strength of a people mainly depended upon their agriculture, and that the introduction of but a single grain or plant, as the rice of Carolina, or the turnip of Norfolk, will sometimes totally change the face and condition of a country. There is a large amount of information on these matters to be derived from the Linnean correspondence lately published by Sir James Edward Smith. The zeal of the colonies to improve their natural advantages, was equally rare and effective.

"Dr. Garden, of South Carolina, tells Ellis in his letter, dated May, 1757: 'at this time we certainly send £150,000 sterling value of indigo to Britain, and we take the manufactures of Britain for every farthing of it.'

"An arithmetical and geographical distribution has been made of vegetables: the total number of species of plants known, or believed to exist, amounts to about 44,000; 38,000 of which have been described according to Humboldt and Brown; 7,000 of these belong to Europe. In temperate America, in both hemispheres, 4,000; in equinoctial America, 13,000; of these 17,000, there are probably described about 3,500. What a field of inquiry does this present to

our ingenious countrymen, and to the lover of philosophy every where? We need not marvel that Linnæus was desirous of visiting America.

"Catesby, in 1767, observed that a small spot of land in America, within less than half a century, furnished England with a greater variety of trees, than had been procured from all other parts of the world, for more than a thousand years past. How far there is reason for America to boast of her forests, we may learn from Michaux. 'It should be remarked,' says the younger Michaux, 'that the species of large trees are much more numerous in North America, than in Europe. In the United States there are more than one hundred and forty species that exceed thirty feet in height, all of which I have examined and described: in France, there are but thirty that attain to this size, of which eighteen enter into the composition of the forest, and seven only are employed in building.'

"A late English traveller, in his journey through the western states, remarks on Kentucky; 'the scenery is peculiarly fine, with attendant cultivation. Here the trees attain an altitude and a size unknown in Europe.' In short, every additional information we derive from the researches and enterprise of enlightened adventurers, gives us additional proofs of the extraordinary natural riches of our vegetable world. Mr. David Douglas, a practical botanist, who but very recently returned from an exploratory tour to the west coast of North America, has communicated to the Horticultural Society of London, riches hitherto unknown in the products of the vegetable kingdom. Among them we find two new species of pine, of more gigantic dimensions than any hitherto described in Europe or America. One species (*Pinus Douglasii*) grows to the height of two hundred and thirty feet, and is upwards of fifty feet in circumference at its base. It is stated to have a rough corky bark, from one inch to twelve inches thick. The leaves resemble those of the spruce, and the cones are small. The timber is heavy and of good quality. It was found growing on the banks of the Columbia, where it forms extensive forests, extending from the shores of the Pacific to the Stony Mountains. The other species (*Pinus Lambertiana*) was discovered in Northern California, where it is dispersed over large tracts of country. It is a most majestic tree. One specimen, which in consequence of its having blown down, Mr. Douglas was enabled to measure, was two hundred and fifteen feet in length, fifty-seven feet nine inches in circumference at three feet from the root, and seventeen feet five inches at one hundred and thirty-four feet. It is thought to be the largest mass of timber ever measured by man;

and yet some of the growing specimens of the same pine were evidently of greater elevation. A singular property of this tree is, that when the timber is partly burned, the turpentine loses its peculiar flavour, and assumes a sweetish taste. It is used by the natives as a substitute for sugar.

"A people so enlightened, scattered over a territory so widely extended, diversified by such great variety both in soil and climate, would naturally turn their attention to the augmentation of the native resources of the country, to the products of the soil; and their own better accommodation. To these circumstances we may attribute the origin of our numerous agricultural societies. The earliest association devoted to this express object, was the Agricultural Society of Pennsylvania, founded in 1785. This has proved the most successful institution of the kind in the United States, and has had great influence in ameliorating the condition of husbandry in our sister commonwealth.

"The introduction of plaster of Paris, which has had a most important and decided effect on the agriculture of America, under the direction of Judge Peters, is owing to this society. Let those who would distinctly learn the extent of obligation by this innovation, read the essay of this learned judge and practical farmer. While I bear my feeble testimony to the value of the services of the Pennsylvania Society, and look into their printed records for the materials of sound georgical science from the experienced Cooper, Mease, Holcombe, Haines, Pickering, and others; of Judge Peters, I may be permitted to take a passing notice. Arriving at adolescence during the troublesome period of the revolution, he embarked in it with characteristic zeal and intrepidity. On the termination of that momentous struggle, he commenced the study of the science of the law, and soon became so distinguished a member of the bar, that he was elevated at an early age to a seat on the bench of the supreme court. The intervals of a laborious profession, he devoted to the cultivation of that science, in honour of which we this day convene. To no individual is agriculture more indebted than to this distinguished man, and the volumes of the *Agricultural Transactions of Pennsylvania*, contain the evidences of his devotion and care. Long may his memory continue to be honoured among us, and may his example stimulate others to similar efforts in the cultivation of this noble science.

"The Agricultural Society of Berkshire is conspicuous among these establishments. Instituted by the public spirit and foresight of the venerable Elkanah Watson, it has become noted throughout our

states, for the wisdom and success of its operations. In the ancient and patriotic state of Virginia, the Albemarle Agricultural Society boasts as its active president and most efficient member, the former chief magistrate of our nation, the illustrious Madison.

"Of the vital importance of agriculture and horticulture, the legislature of the state of New York has always been duly sensible. At an early period, the members of that honourable body formed themselves into a society for the promotion of those branches of physical knowledge; and at least, this good has flowed from their zeal, that our state has been gradually stimulated to a degree of exertion and patronage in favour of these pursuits, greater than that of any other member of the confederacy.

"All our governors since the revolution, from the patriotic George Clinton to his enlightened relative, have, in their communications to our state councils, recommended this great interest to their protection. 'As agriculture is the source of our subsistence, (says the late De Witt Clinton, in his inaugural speech as governor of New York,) the basis of our strength, and the foundation of our prosperity, it is pleasing to observe the public attention awakened to its importance, and associations springing up in several counties, to cherish its interests.' Again he observes, 'this important pursuit is the foundation of wealth, power, and prosperity: it requires the energies of the mind as well as the powers of the body: it demands the light of science to guide its progress, and the munificence of government to accelerate its movements, to extend its usefulness, and to diffuse its blessings.'

"Alive to these views, a society for the promotion of agriculture and the useful arts, was organized by our state authorities in 1791, and no one can read the memorials of their acts and proceedings, without feeling the obligation this state owes to the good sense and practical sagacity of the members of this early association, Rutherford, L'Homedieu, Jones, De Witt, Kent, and the late Chancellor Livingston.

"At the earnest suggestion of the late Governor Clinton, an act was passed by the legislature of New York, in 1819, for the institution of a board of agriculture, and the sum of \$10,000 appropriated annually for six years, to further its various objects in the different counties of the state.

"Of the peculiar merits of the transactions of the agricultural board, let the learned and skilful in georgical science speak: But wherever agriculture is appreciated as an art, or understood as a science, the labours of Armstrong, Buel, De Witt, Bradley, Brown, Van Rensselaer, and Featherstonhaugh, will be recognised, and add to that spirit of emulation which

is indispensable to the cultivation of rural affairs. 'If the county of Schoharie alone,' says E. Watson, 'had received all this bounty, it would have fully justified the wisdom of our councils.'

"To render this hasty sketch of the progress of rural affairs less imperfect, it would become necessary to take some notice of the establishment of botanical and other horticultural institutions in this country; of the gardens of Parmentier, Prince, and others; but opportunity does not allow us at this time.

"In common with all lovers of nature, we must regret the destruction of the garden at Charleston, the earliest in these states, and formed by the elder Michaux: The Botanical Garden at Kingsess was long the theme of praise, and is still the resort of philosophy. This establishment was first carried into effect by the self-taught naturalist, John Bartram. Here, in a delightful situation, he brought together a large collection of American plants and exotics, and by extensive travelling through the country, from Canada to Florida, added to their number. So successful a botanist did he become, that Linnæus, in one of his letters, speaks of him as the greatest natural botanist in the world.

"He maintained an extensive correspondence with eminent men, both in his native country and abroad, and Gronovius and Kalm, Hans Sloane and Linnæus, were instructed by his discoveries. Subsequently the garden came under the superintendence of his son William, extensively known by his travels, who seems to have inherited the unwearied zeal and vigorous capacity of his father, for the sublime studies of nature. In 1801, the former distinguished president (Dr. David Hosack) of this society, instituted by individual effort, an extensive botanic garden in the vicinity of this city, which was purchased by the state in 1810. Flourishing under its founder, it perished under the neglect of the public. It is not for me to speak of the disgrace which the state sustains by its failure in this enterprise.

The New York Horticultural Society, though recently instituted, has not been without its profitable results. The products of our gardens, and the richness of our markets, indicate its salutary effects; which, I trust, are the harbingers of still more valuable and important advantages. It must be gratifying to those who have so assiduously laboured in the cause, that the services of this society have been placed in so favourable a light, by the president (Myron Holley, Esq.) of a kindred institution in the western part of this state. Indeed, this day's exhibition has regaled our senses with richer gifts than have been presented to us on any former occasion.

"This city is most happily situated for the purposes to which this society is devoted. Open in its intercourse to every part of the globe, it receives in its capacious bosom, the tribute of every climate and soil; and, under proper regulations, this institution may be the means of rendering the most ample returns. Moreover, by a proper understanding with our sister states, a profitable interchange may be established with every part of our country, and above all, the different counties of our state may be made to partake in all the rich variety of our natural and artificial culture. Already has one of our western counties imitated our example, and borne testimony to our success. May the example spread.—This society will not withhold its countenance, and whatever aid may lie within its power.

"It will not, perhaps, be deemed foreign to the objects of this discourse, to suggest to the proper authorities, the propriety of establishing in the vicinity of this city, or in whatever place may be deemed most appropriate, an institution for the promotion of Agriculture, in a mode somewhat analogous to that of the military academy at West Point. An experimental farm, with a school for instruction in the various branches of preliminary education and agriculture; the teachers paid by the state, the student at liberty either to make compensation by labour on the farm, or by pecuniary remuneration, for the expenses of his living; to each county the privilege afforded of sending a pupil for a certain number of years, and in proportion to its representation in the house of assembly, would probably be the best means of furnishing to each portion and section of the state, every improvement which either philosophy or experience might contribute to this science. How far the interference of this society in favour of such a project, might aid in its accomplishment, or whether indeed the suggestion is worthy of their consideration, I leave to the determination of those who possess a more intimate and practical acquaintance with these affairs. 'The art of agriculture, (says Sir John Sinclair,) can never be brought to its highest degree of perfection, or established on rational and unerring principles, unless by means of experiments accurately tried, and properly persevered in. The ardent inquirer has too long been obliged to rely on vague opinions and assertions, which have not been warranted by sufficient authority. It is full time, therefore, by the establishment of experimental farms, under the sanction, and at the expense of government, or by enabling the board of Agriculture to grant adequate premiums to deserving persons for new discoveries, to bring the art to as great perfection as possible, by ascertain-

ing the principles on which it ought to be conducted.'

"Whether the New York Horticultural Society will be content in the present sphere of its usefulness, a usefulness admitted by the unanimous approbation of our citizens, and lauded by the soundest farmers of our country, depends, as all future operations must do, upon the available means it may command, and the energy and cordial co-operation of its members. In wider sphere, objects of no less consideration, and, perhaps, of greater value, might justly demand a portion of its care, and the employment of its resources.

"Of the many subjects deserving particular inquiry, conspicuous among all others, would be a greater attention to trees, the ornament and defence of our nation ;

Decus et tutamen.

'With the tree,' says Pliny, 'we plough the ocean and the land, and construct our dwellings.'

"Neither the federal government, nor the several states, have reserved forests. The effect is already very sensibly felt in the large cities, where the complaint is every year becoming more serious, not only on account of the excessive dearness of fuel, but for the scarcity of timber. Even now inferior wood is frequently substituted for the white oak ; and the live oak, so highly esteemed in ship-building, will soon become extinct upon the lands of Georgia.

"Several admirable papers have been published on the best means of cultivating and preserving our fruit trees, by those of our countrymen who were most competent, from practical knowledge on the subject. The venerable Thacher has enriched this department of horticultural science with a sound volume, entitled the *Orchardist*. Among American physicians, Dr. Thacher ranks high, not only by his labours in his profession, but by various efforts in the departments of natural science. In his *Military Journal of American Independence*, his patriotism and his fidelity to truth are equally evident. But it is more pertinent to our present purpose to observe, that his *Orchardist* may be consulted by American farmers with advantage, and that by his recent work on *Bees*, he has evinced a degree of observation, which adds to his reputation as an admirer of nature. May I be permitted to add, that my own personal acquaintance with this exemplary individual, corresponds with the opinion I had formed of his character, and that he unites to the utmost urbanity of demeanour, the most valuable qualifications in his profession. Mr. Coxe, of New Jersey, in his *Treatise on Fruit Trees*, has displayed a research which

gives his labours a value not possessed by those of Forsyth ; and several reprints in this country of the *Agricultural Chemistry* of Sir Humphrey Davy, demonstrate that the philosophy of agriculture has become a study of deep interest to our American farmers.

"On the cultivation of the silk, a distinguished member of this society, Dr. Pascalis, has lately favoured us with the first portion of a treatise of great excellence, on the cultivation of the mulberry tree. Of the redeeming powers which this nation possesses in the consequences which must ensue from this culture, let the statesman and the political economist speak. Our foreign trade in silk costs this nation annually fourteen millions of dollars. In the opinion of some of our most capable judges, the culture of silk might become a subject of great importance among us, and thus the fair daughters of our land be decorated only in native charms ; for American beauty needs not the aid of foreign ornament. Within the past week we have been informed, that at a late meeting of the Agricultural Society of Ohio, beautiful specimens of silk, the growth and manufacture of that state, were exhibited.

"The cultivation of the vine is also here noticed, because the feasibility of the measure is most readily admitted, by those who know most on the subject. More than fifty years ago, a judicious practical observer urged its practicability upon the attention of this state, as one of peculiar importance, and entirely within their power. But without a longer enumeration, I will briefly add, that a philosophical inquiry might well be instituted into the expediency of reviving the cultivation of indigo, and the greater security to life and health, in deriving this article from the dry rather than from the wet leaf.

"In the culture of cotton and the sugar cane, long time as both these staples have occupied our attention, each challenges greater care and more correct principles. The invention of the cotton gin, for separating the seed from the cotton, and the application of improved machinery to the manufacture of the raw material, have given to this article its present value and importance : they are the great agents by which all the wonders of the cotton cultivation in the United States have been effected. In 1789, a member of the house of representatives of the United States, from South Carolina, stated, that the people of the southern states *intended* to cultivate cotton ; and added, if good seed could be procured, he hoped they might succeed. In 1817, the cotton exported amounted to 86,649,328 pounds. If Professor Olmsted's late experiments on cotton seed shall be proved

to be correct, we have still further inducements held out to us. We have good reason to believe that South Carolina alone may furnish three millions of bushels of cotton seed, which will command nearly a million of dollars for the manufacture of oil, when the principle of its manipulation shall be fully established. The nature, composition, and analysis of our soils, offers much for the talents of the most skilful. Dr. Macneven has already in part performed this service: it would be well for agriculture, that others would imitate his example, and rival his efforts.

"In an augmented sphere of action, this society would be obligated to throw light on those intricate subjects, the diseases of vegetable life and of domestic animals. Here is a vast and comparatively unexplored field, which, if properly investigated, would give to the husbandman a triumph for his toils, which he despairs of ever possessing in the present condition of our knowledge. The agriculturist who stocks his farm with foreign breeds, or cultivates our domestic animals with proper solicitude, would derive results from studies connected with the economy of animals and their disorders, and the comparative illustrations adduced from vegetable life, that could not fail to secure the most desirable results. We have reason to suppose that these pursuits were cherished with special regard in the early state of husbandry and rural economy.

"The contested points concerning seedlings and ingraftings, demand our severest scrutiny. Mr. Knight's inferences, that those fruit trees which have for more than a century been propagated by ingrafting, and not from seeds, are liable to canker, and are not worth cultivation, have recently been ascertained to be too well founded. The golden pipin is fast wearing out, and the winter pears of England have nearly disappeared. But fortunately, they (the English) have lately procured from our country, by means of our late president, (Dr. David Hosack,) the seckle pear, already of extensive growth among them, a fruit which they pronounce of excellent flavour. I saw that the plane trees (American *platanus occidentalis*) in the gardens of Chelsea, Oxford, and Cambridge, were all of them simultaneously in a state of decay, though they had flourished in these respective places for a long series of years. The conservators of those gardens, with all their philosophy, were unable to explain the cause. Do the products of grafting die with the parent stock? Miller long ago observed, that herbaceous plants propagated by cuttings, became sterile in a few years. Are there disorders of an epidemical and hereditary nature among trees and vegetables? What is the cause of the calamity which

has lately befallen the venerable elm, both in this country and in Europe? Flax, so much neglected at present, might, with proper attention, become one of the most productive and profitable occupations of husbandry. It is one of the labyrinths of our policy, to account for the present neglect on this subject.

"That our agriculturists have the means, under improved and more extensive regulations, to secure to themselves and to their descendants, the blessings now in anticipation by such investigations, is seen in the discoveries and suggestions they have already made. We need most the precepts of those who practice on our own soil; and after having perused the works of Dickson, and Marshall, and Hunter, and Abercrombie, we turn with a more solid, because a more practical satisfaction, to the pages of our own writers; the New England Farmer of Deane, the American Gardener of Fessenden, the Kitchen Garden of Wilson, and the Essays of Arator, by Taylor, of Virginia. In addition, the New England Farmer, by Fessenden; the New York Farmer, under the patronage of this society; the American Farmer of Skinner, and other periodical journals, by their mutual co-operation and rivalry, contribute to illustrate and extend the principles and improvements of American horticulture.

"I am proud that my native state has not been behind hand in furnishing her quota of distinguished writers and patrons of agriculture.

"The late Chancellor Livingston will ever be cherished by New York, as one of her most gifted sons and accomplished agriculturists. After devoting his youth and manhood to the defence of his country in the hour of peril, and his maturer years to rear her civil institutions, asking permission to retire from political tumult and contention, he taught our hardy farmers how to till the soil with most profit, and what herds might most advantageously graze upon her lawns. Of Dr. Mitchill, of this city, it would be unjust to omit his name in the list of those who, by their talents and knowledge, have contributed to encourage a taste among us for the beauties of nature. His versatile talents, his various knowledge, his urbanity and courtesy, are known to all of you; but I can not omit the opportunity to say, that amidst the bustle and business of a commercial metropolis, surrounded by the zealous and exclusive devotees of wealth, he has nobly pursued the path of science, generously pointed out the way to our youth, and cheered them in their course. If there be among us any taste for Natural History, to him are we in a great degree indebted for it; and that excellent institution, the Lyceum of Natural History

of New York, attests his activity and zeal, and contains the recorded evidences of his science.

"There still resides among us another distinguished citizen, (Hon. Stephen Van Rensselaer,) whose name reminds us of all that is magnificent in patronage, and generous in hospitality; and whose exertions in the interests of agriculture, have far exceeded all that has been allotted to any other individual of our state. Omitting as irrelevant to our purpose, his labours in the councils of the nation, I shall only at present point out to you, countries explored, and institutions for agriculture founded, by his wealth, and reared by his care. Long may this illustrious citizen live to exhibit to our people, a benignant example of the civic virtues of opulence devoted to the benefit of the indigent, and of patronage bestowed on the arts of agriculture.

"In the absence of all aid from the state, no means can be devised more appropriate to those great undertakings, than the union of those devoted to their accomplishment. Most happy have been the results of the labours of those who have united in efforts requiring co-operation; stimulated by mutual zeal, and rewarded by mutual success.

"Is it an unwarrantable extravagance, to anticipate that America will become the chosen residence of agriculture, and the rites of Flora. Although in the infancy of our condition, commerce, and more recently, manufactures, have gained a supremacy; and the former, as contributory most to its support, may also expect to attain most of its protection; the claims of agriculture will ultimately prevail in a country of such boundless extent, and which no less boasts independence on the rest of the world by the multiplicity of its resources, than it sets defiance to their power, by the vigour and valour of its population. We trust it never can be said, that a people who derived their origin from the most enlightened of modern nations, in an age fertile beyond all former example in genius and improvement, who were impelled by elevated and generous incentives in their adventure, and when checked in their enterprise, turned their arms with dauntless boldness, and final success, upon their unnatural parents; who inhabit a country which contains within itself, the productions of every soil and climate, become recreant to its own honour and greatness, and false to its own high destiny. The omens are auspicious: and when in the course of time, and the progress of society, her population shall have become augmented, and her resources developed; when the grandeur and sublimity of her native scenery, and the magnificence of her rivers shall have been appropriated and cultivated, and the fairy

hand of civilization have enchanted and enlivened her woods and forests, admiring nations will yield that tribute to her moral greatness, which they had before rendered to the arm of her physical power.

"The present age can alone be supposed to have been fully aware of the advantages of science, or to have improved it with the proper aids of experiment and art. In Great Britain have those facilities combined, which were necessary to the development of its principles. In having recourse to her science, we do but acknowledge her greater maturity in those arts, in which it will be our pride to join hereafter in mutual emulation. The obligation will be reciprocal, and she is already indebted to us for a gift more precious than the mines of Potosi.

"Of the moral purity and dignity inherent in the cultivation of the earth, I need not here insist at length. It is too obvious to be misunderstood, and is illustrated in the life and writings of many of the most distinguished names in our own, as well as in foreign nations. I will merely allude to the fact, that a garden was the seat of man in his state of innocence, and that it was in a garden that Plato and Aristotle instructed their disciples in sublime lessons of wisdom, inferior only to the truths which revelation has brought to light. And when majestic Rome subjugated and civilized the barbarous nations around her, by the vigour of her arms and the triumphs of her policy, the commanders of her victorious legions were chosen from the cultivators of her fields.

"In our own nation," concludes Dr. Francis, "the father of his country left reluctantly the farm for the field of battle, and having overcome the enemies of freedom, returned to the labours of agriculture. And when a second time his services were demanded, having filled the measure of his own and his country's glory, he again resumed those peaceful pursuits which it was his delight to cherish, and which nothing but his country's call could have induced him to forego. Thence he was summoned by his Maker to a higher scene; and although death on the field of battle is more consonant to human pride, to surrender our life at his bidding, is more agreeable to the wish of our Maker. Thus it was ordered by his Creator, that man in a state of innocence, should exercise the arts of agriculture for his enjoyment, and in a state of trial, its labour for his security. The foundations of our republic were cemented in blood; but let us trust that its supremacy will be reared by the innocent arts of peace."*

* See Address delivered before the New York Horticultural Society, at their anniversary, 1829. By John W. Francis, M.D. &c. New York, Conrad, 8vo. 1830.

CHAPTER II.

MANUFACTURES.

THE subject on which we now enter is one, the importance of which is too deeply felt by the mass of the community, both in America and Great Britain, especially at the present period, to require any prefatory observations to attract attention to it. The manufactures of the United States, if not altogether of recent origin, are of surprising recent growth. During their colonial state, the British government discouraged to the utmost every tendency to manufacture even comparatively trifling articles: with other articles, the manufacture of hats was entirely prohibited.* The cessation of intercourse between the two countries during the revolutionary period, gave the first great impulse to the manufacturing principle, and left the states no longer dependent on Britain for several of the minor articles of manufacture. "On the return of peace, in 1783," says Mr. Everett, in his admirable address before the American Institute, October 14, 1831,† "the influx of foreign goods, in many respects prejudicial to the country, proved in the highest degree disastrous to its mechanical and manufacturing industry. The want of one national government, and the division of the powers of government among thirteen sovereignties, made it impossible, by a uniform revenue system, to remedy the evil. The states generally attempted, by their separate navigation laws, to secure their trade to their own vessels; but the rivalry and selfish policy of some states counteracted the efforts of others, and eventually threw almost the whole navigation of the country into foreign hands. So low had it sunk in Boston, that in 1788 it was thought

* "While the colonies were increasing in population, and endeavouring to secure to themselves, in some degree, the benefits of their own industry and economy, complaints were constantly made to parliament, by interested individuals, that the colonists were not only carrying on trade, but were setting up manufactures detrimental to Great Britain. These complaints produced an order of the house of commons, in 1731, directing the Board of Trade to inquire and report, 'with respect to laws made, manufactures set up, or trade carried on, detrimental to the trade, navigation, or manufactures of Great Britain.' In a report made, in pursuance of this order, the commissioners found that certain trades carried on, and manufactures set up in the colonies, were injurious to the trade, navigation, and manufactures of the parent country. Among the manufactures, were enumerated those of wool and flax, iron, paper, hats, and leather. The Company of Hatters in London complained that great quantities of hats were made in New England, and exported to Spain, Portugal, and the British West India islands; and through their influence, an act of parliament was procured, not only to prevent the exportation of hats from the colonies to foreign countries, and from being carried from one plantation to another, but to restrain, to a certain extent, the manufacture of them in the colonies. In 1732, hats were prohibited from being shipped, or even laden upon a horse, cart, or other carriage, with an intent to be exported to any other plantation or to any place whatever. At the same

expedient, on grounds of patriotism, to get up a subscription to build three ships; and this incident, proving nothing but the poverty and depression of the town, was hailed as one which would give renewed activity to the industry of the tradespeople and mechanics of Boston! The same class of citizens, and the manufacturers in general, in the state of Massachusetts, petitioned the government of that state, by bounties, imposts, and prohibitions, to protect their industry. This prayer was granted, and a tariff of duties laid, which, in some points,—that of coarse cottons for instance,—was higher than any duty laid by congress before the war of 1812. But the state of the country rendered these laws of little avail. Binding in Boston, they were of no validity in Rhode Island; and what was subject to duty in New York, might be imported free in Connecticut and New Jersey. The state of the industry of the country was depressed to a point of distress unknown in the midnight of the revolution. The shipping had dwindled to nothing. The manufacturing establishments were kept up by bounties, and by patriotic associations and subscriptions, and even the common trades were threatened with ruin. It was plain, for instance, that, in the comparative condition of the United States and Great Britain, not a hatter, a boot or shoe maker, a saddler, or a brassfounder, could carry on his business, except in the coarsest and most ordinary productions of their various trades, under the pressure of foreign competition. Thus was presented the extraordinary and calamitous spectacle of a successful revolution wholly failing of its ultimate object. The people of America had gone to war, not for names, but for things: it was not merely to change a government, administered by kings, princes, and ministers, for a govern-

time, no hatter in the colonies was allowed to employ more than two apprentices at once, or to make hats, unless he had served an apprenticeship to the trade seven years, and no black or negro was permitted to work at the business of making hats.

"The manufacturers of iron next claimed their share in the benefits to be derived from the colonies. They were willing the poor colonists should reduce the iron ore, with which their land abounded, into pigs, and even bar iron, and that the same be brought to their doors, duty free, provided they could monopolize the manufacture of it beyond this incipient stage. In the year 1750, parliament permitted pig and bar iron to be imported from the colonies into London duty free, but prohibited the erection or continuance of any mill or other engine for *slitting* or *rolling* iron, or any *plating forge*, to work with a tilt hammer, or any furnace for making steel in the colonies, under the penalty of two hundred pounds. More effectually to carry this act into execution, every such mill, engine, plating forge, and furnace, was declared a common nuisance, and the governors of the colonies, on the information of two witnesses on oath, were directed to cause the same to be abated within thirty days, or to forfeit the sum of 500l."—*Pitkin's Civil and Political History*, vol. i. p. 101, 103.

† We should recommend all our readers who feel interested in the question of "free trade," to procure this judicious and lucid discourse.

ment administered by presidents, and secretaries, and members of congress; it was to redress their own grievances, to improve their own condition, to throw off the burden which the colonial system laid on their industry. To attain these objects, they endured incredible hardships, and bore and suffered almost beyond the measure of humanity. And when their independence was attained, they found it was a piece of parchment. The arm which had struck for it in the field, was palsied in the workshop; the industry which had been burdened in the colonies, was crushed in the free states; and, at the close of the revolution, the mechanics and manufacturers of the country found themselves, in the bitterness of their hearts, independent—and ruined. They looked round them in despair. They cast about for means of relief, and found none, but in a plan of a voluntary association throughout the continent, and an appeal to the patriotism of their fellow-citizens. Such an association was formed in Boston in 1787 or 1788, and a circular letter was addressed by them to their brethren throughout the union. The proposal was favourably received, and in some of the cities zealously acted upon; but, unsupported by a general legislation, its effects must at best have been partial and inadequate. But before our meritorious citizens had discovered this, by sad experience, a new and un hoped-for remedy for their sufferings had been devised. The day-star of the constitution arose; and of all the classes of the people of America, to whose hearts it came as the harbinger of blessings long hoped for and long despaired of, most unquestionably the tradesmen, mechanics, and manufacturers, hailed it with the warmest welcome. It had in fact grown out of the all-pervading inefficiency and wretchedness of the revenue system, which had been felt in ruin by them more than by any other class."

Under the new constitution, a system of revenue laws, which afforded considerable protection to the manufacturers, was adopted; and to these, combined with the effect of the embargo of 1807, and the subsequent war, the present manufacturing system of the United States may be said to owe its rise; for the progressive enactments of protecting duties since the close of the war may be truly said to have been originated by the amount of capital involved and labour employed previously. Before we notice the particular species of manufactures now carried on, a general sketch of their progress, and the legislative measures by which they have been fostered, will not only afford matter of interest to the political economist, but will enable those engaged in mercantile pursuits to form a tolerably correct idea of the course

which will probably be pursued in future by the United States.

The first attempt to obtain a general account of the state of manufactures throughout the United States, was made by the government in 1810. The marshals of the several states, and the secretaries of the territories, and their assistants, were directed, pursuant to instructions from the secretary of the treasury, to make returns of the manufacturing establishments, and of the manufactures within their respective districts, territories, and divisions, and these were transmitted to the secretary of the treasury, for the purpose of being laid before congress. Some elaborate and valuable returns were made and transmitted, though the greater number of them were irregular, and evidently very deficient; those which came from Massachusetts, Connecticut, New York, Pennsylvania, and Virginia, were the most complete. Notwithstanding, however, the imperfection of the returns, the agents reported 1,776 carding machines, by which 7,417,216 pounds of materials had been carded; 1,682 fulling mills, and 5,452,960 yards, which had been fulled; 122,647 spindles; 325,392 looms; 153 iron furnaces, and 53,908 tons of iron manufactured; 330 forges, which made 24,541 tons of bar iron; 316 trip hammers; 34 rolling and slitting mills, which required 6,500 tons of iron; 410 naileries, in which 15,727,914 pounds of nails had been made; 4,316 tanneries, producing 2,608,240 pounds of leather; 383 flaxseed oil mills, making 770,583 gallons of oil; 141,191 distilleries, producing 22,977,167 gallons of spirits from grain, and 2,827,625 gallons from molasses; 132 breweries, in which 182,690 barrels of beer had been made; 89 carriage makers, who made 2,413 carriages; 33 sugar refineries, in which 7,867,211 pounds of refined sugar had been manufactured; 179 paper mills, furnishing 425,521 reams of paper; 4 stainers, who stained and stamped 148,000 pieces of paper; 22 glass works, which furnished 4,967,000 square feet of window glass; 194 potteries; 82 snuff mills; 208 gunpowder mills, in which 1,397,111 pounds of powder had been made.

The following summary of the value of the manufactures of the United States is founded on the above returns:—

	Value in Dollars.
1 Goods manufactured by the loom, from cotton, wool, flax, hemp, and silk, including stockings	39,497,057
2 Other goods spun from the five materials above enumerated	2,052,120
3 Instruments and machinery manufactured, estimated at 186,650 dollars; carding, fulling, and floorcloth stamping by machinery, estimated at 5,957,816 dollars	6,144,466

	Value in Dollars.
4 Hats of wool, fur, &c., and from mixtures thereof	4,323,744
5 Manufactures of iron	14,364,526
6 Ditto of gold, silver, set work, mixed metals, &c.	2,483,912
7 Ditto of lead	325,560
8 Soap, tallow candles, and wax, spermaceti, and whale oil	1,766,292
9 Manufactures of hides and skins	17,935,477
10 Ditto from seeds	858,509
11 Ditto from grain, fruit, and case liquors, distilled and fermented	16,528,207
12 Dry manufactures from grain, exclusively of flour, meal, &c.	75,766
13 Manufactures of wood	5,554,708
14 Ditto of essences and oils, and from wood	179,150
15 Refined sugars	1,415,724
16 Manufactures of paper, pasteboard, cards, &c.	1,939,285
17 Ditto of marble, stone, and slate	462,115
18 Ditto of glass	1,047,004
19 Earthen manufactures	259,720
20 Tobacco ditto	1,260,378
21 Drugs, dye stuffs, paints, and dyeing	500,382
22 Cables and cordage	4,243,168
23 Manufactures of hair	129,731
24 Miscellaneous manufactures	4,347,611
	<hr/> Dollars 127,694,602 <hr/>

Mr. Tench Coxe, of Philadelphia, to whom the secretary of the treasury, in 1810, confided the arrangement of the returns of the marshals, &c., concerning the manufactures of the United States, in addition to the above estimates, observes, "From a consideration of all the reported details, and by a valuation of the manufactures which are entirely omitted, or imperfectly returned, for 1810, the foregoing amount of 127,694,602 dollars, is extended to 172,762,676 dollars; the sum last mentioned does not embrace the doubtful articles. The doubtful branches include such manufactures as have a very near relation in their character to, and connexion with, agricultural pursuits, among which are the following; viz. cotton pressing, flour and meal, the mills for grinding grain, the barrels for containing the articles manufactured, malt, saw mills, horse mills, pot and pearl ashes, maple sugar, sugar from the cane, molasses, rosin, pitch, slate, bricks, tiles, saltpetre, indigo, red ochre, yellow ochre, hemp and hemp mills, fisheries, lime, grinding of plaster of Paris, &c. &c.; all of which are estimated at 25,850,795 dollars, making the aggregate value of the manufactures, of every description, within the United States, for 1810, 198,613,471 dollars."

The preceding was the state of American manufactures previously to the war, which lasted from 1812 to 1815. During this period, the country was in the same state with regard to manufactures, as though they had been protected by duties absolutely prohibitory, and, consequently, a most amazing increase of the capital and labour engaged in man-

ufactures accrued, especially in the staple articles of cottons, woollens, and iron. The capital employed in various manufactures at this period has been estimated at 1000 millions of dollars; but on the return of peace, the influx of European goods reduced the prices nearly 50 per cent., and closed, probably, one-half the manufacturing establishments of the Union. This circumstance alone could not fail to raise the question of the propriety of some additional protecting enactments being passed; but the effect of the British corn laws on both the agriculture and commerce of America, tended yet more than the distressed state of her manufactures to render popular the imposition of protecting duties; and in 1816 a considerable increase of duties on many articles of foreign commerce was enacted by congress. A few years' experience, however, under the uninterrupted operation of the commercial regulations of the two countries, demonstrated that inequalities still existed, and produced the conviction, that a further modification of the revenue laws was necessary. The people themselves took the lead, and gave the impulse to congress. An unsuccessful attempt was made in 1822. In 1824, the attempt succeeded, and various augmentations in the imposts were made, with the view of protecting American manufactures, and to secure to them the domestic market. On some articles of foreign manufacture, and more especially on the great British staple of cotton cloths, duties were imposed almost prohibitory, except on those of the finer kind; and the experience of a few years established the ability of the Americans to supply themselves with manufactured cottons, upon better terms than they could be procured from England. On woollen manufactures, the duty imposed in 1824 proved inadequate for protection; and the languishing state of that manufacture indicated the ruin of those engaged in it, without further legislative encouragement. Application was accordingly made to the nineteenth congress, for an increase of duties on imported woollens. After a long and animated discussion, the bill received the sanction of the house, 106 to 95; but was laid on the table (which was equivalent to rejection) in the senate, by the casting vote of the vice-president. Steps were immediately taken to bring the subject again before congress; and a general convention of delegates from the states was held at Harrisburgh, with the view of concentrating public opinion, and of obtaining an harmonious co-operation in the measures to be taken for the encouragement of domestic manufactures. Contrary to general expectation, no notice was taken of the subject in the opening message to the following congress; but in the annual report from the secretary of the

treasury, on the 10th of December, 1827, an elaborate view was taken of the manufactures of the country, and their encouragement and protection warmly recommended. "The time that has passed since the tariff of 1824," says the secretary, Mr. Rush, "has been sufficient to show, that the duties fixed by it upon these articles* are not adequate to the measure of success in producing them at home, which their cardinal importance merits. A change, since 1824, in the laws of Great Britain, in regard to those first named, has also rendered almost abortive the provisions of the tariff in their favour. It belongs to the purpose of this report, which looks to the encouragement of the national industry in preference to any that is foreign, here to state, that, for a period of six successive years, ending with 1826, the value of woollen goods and cotton goods imported into the United States from the country just named, exceeds one hundred millions of dollars; and the value of iron, and of articles manufactured from iron, seventeen millions. During one of these years, the woollens exported from that country to this exceeded the amount of those exported to the whole of Europe put together. For the means of exchange against an amount of foreign manufactures so great, the United States have had three principal staples of their soil, viz. wheat-flour, tobacco, and cotton. The first of these the same country has, by her laws, positively or virtually excluded, during the same period of years, from consumption within her dominions. The second she has admitted, under a duty of more than 600 per cent. The third she has received with little scruple. She has known how to convert it into a means of wealth to her own industrious people, greater than had ever before, in her whole annals, been derived from any single commodity. This she has done, first by working it up for her home use upon the largest scale, and, next, by making it subserve the interests of her foreign trade. The complete establishment of American manufactures in wool, cotton, iron, and hemp, is believed to be of very high moment to the nation. All the principal raw materials for carrying them on are at hand, or could be commanded. The skill for imparting excellence to them would come at the proper time. There would be no want of labour, to which an abundant water-power, as well as artificial machinery, would every where be lending its assistance. Capital would be found for investment in them. If their establishment, by the immediate protection of the laws, should, at first, raise the cost of the articles, and, for a succession of years, keep it up,

a true forecast, looking to the future, rather than adapting all its calculations to the existing hour, would not hesitate to embrace the protecting policy. If it were a question of fostering manufactures for which the circumstances of the country yielded not abundant facilities, then indeed could success be accomplished only by indefinite forcing, to be followed by indefinite monopoly in price. Such is manifestly not the case. Manufactures of fine cotton, of woollens of almost all descriptions, of iron articles, and of those from hemp, have already arrived at a point, in the United States, justifying the conclusion that some additional encouragement from congress is alone wanting to fix them upon lasting and profitable foundations. This additional encouragement is invoked as a proper offset to the high degree of success which foreign industry has attained in these branches by the effect of capital and skill, long pre-existing in older nations, and long aided by their laws. These are advantages not intrinsic, but accidental. Yet they cannot be countervailed but by efficient legislative aid to our own establishments in the beginning."

Early in the session, the committee on manufactures entered on the investigation of the subject; and to them the petitions which flowed in from all portions of the country, both for and against an increase of duties, were referred. The resolutions also which were transmitted to congress from the legislatures of Rhode Island, New York, New Jersey, Pennsylvania, Ohio, and Indiana, in favour of an augmentation of duties, and those from Virginia, North Carolina, South Carolina, Georgia, and Alabama, in opposition to that measure, were referred to the same committee. On the 31st of December, the chairman of the committee, Mr. Mallary, by direction, submitted a resolution, that the committee be vested with power to send for persons and papers; which was, after a long debate, agreed to. The committee, thus authorized, issued subpoenas for twelve witnesses, who were examined, together with nine who voluntarily attended, and seven members of the house. The examination was principally directed to ascertaining the cost of manufacturing iron, steel, wool, hemp, flax, sail duck, spirits from grain and molasses, glass, cotton, and paper; the capabilities of the country to manufacture them, at that time; and whether any alteration of the duties was required to protect the manufacturer against foreign competition. After four weeks spent in examining the various witnesses, the committee, on the 31st of January, made a report, accompanied by the testimony taken, and a bill, in which an increase of various duties was recommended, and which, after long discussion in both houses,

* Manufactures from woollens, cotton, and iron.

and receiving several amendments, was passed into a law.* This measure was not only violently opposed in both houses, by the representatives of the southern states, but after it had become a law, the vehemence of opposition was still more manifest among the inhabitants, and even in the state legislatures of that section of the union. The question still continues to occupy the first place in the discussion of the periodical press, the language of which is still occasionally so violent as almost to indicate the probability of separation between the southern and northern states, if the tariff is persisted in.

It would be incompatible with the limits, if not irrelevant to the purpose of this work, to enter into any lengthened discussion of the now virulently-contested question of free trade, as applicable to the United States. With all the light which political economists have thrown on the subject, (and for some modifications of non-intercourse laws the nations are certainly indebted to their labours,) the scheme of establishing a general system of free trade, in the present condition of the world, seems to be utterly hopeless; and this being the case, it appears to us, and we apprehend it will to every one who follows candidly

the path of investigation through which the claims of this work have necessarily led us, that there is no nation to which laws restricting the admission of foreign manufactures, if judiciously arranged, can be more beneficial than the United States. In considering this subject, those who, on either side of the Atlantic, have charged the American legislature with folly, overlook a very important circumstance, arising from the extent of space, and the variety of climate embraced by the limits of the republic, namely, that, to a vast extent, trade, which to other nations is a foreign trade, is to the United States domestic; for instance, as far as commerce is affected, Louisiana and Georgia are at least as foreign in relation to New York or Massachusetts, as Spain or Turkey are to Great Britain:† consequently, the relative importance of foreign commerce, the interests of which are mainly impeded by restrictive laws, must ever be less than in the case of other nations; while, on the other hand, the existence of a manufacturing population must tend to promote domestic cultivation, trade, and commerce, to an extent proportionably greater than would be effected in other kingdoms.‡ With respect to the numerous other circumstances which must be

* * The bill, as originally proposed, was as follows:—(The final result will be apparent in the table of duties.) On iron in bars, not manufactured by rolling, 1 cent per lb.—On iron in bars, manufactured by rolling, 37 dollars per ton.—On pig iron, 62 1-2 cents per cwt.—On iron and steel wire, not exceeding No. 14, 6 cents per lb.; exceeding No. 14, 10 cents per lb.—On round iron, of three sixteenths to eight sixteenths of an inch in diameter; on nail rods, slit or rolled; on sheet and hoop iron; on iron slit or rolled for bands, scroll, or casement rods, 3 1-2 cents per lb.—On adzes, axes, drawing and cutting knives, sickles, sithes, spades, shovels, squares, (of iron or steel,) bridle-bits, steelyards and scale-beams, socket chisels, vices, and screws for wood, 10 per cent. ad valorem beyond the present duty.—On steel, 1 dollar 50 cents per cwt.—On raw wool, 7 cents per lb.; and, in addition thereto, 40 per cent. ad valorem, until June 30th, 1829; from which time an additional duty of 5 per cent. ad valorem shall be imposed annually, until it shall amount to 50 per cent. All wool imported in the skin to be estimated as to weight and value, and to pay the same rate of duty as other wool.—On woollen manufactures, of which the actual value shall not exceed 50 cents the square yard, 16 cents duty the square yard.—On all of which the value is between 50 and 100 cents the square yard, 40 cents duty the square yard.—On all between 1 dollar and 2 dollars 50 cents, a duty of 1 dollar the square yard.—On all between 2 dollars 50 cents and 4 dollars, a duty of 40 per cent. ad valorem to be levied, and the goods to be valued at 4 dollars the square yard.—On all exceeding 4 dollars, a duty of 45 per cent. ad valorem.—On woollen blankets, hosiery, mits, gloves, and bindings, 35 per cent. ad valorem.—On raw hemp and raw flax, 45 dollars the ton, until June 30th, 1829, and then an additional duty of 5 dollars annually, until the whole shall amount to 60 dollars per ton.—On sail duck, 9 cents the square yard.—On molasses, 10 cents per gallon.—On all imported spirits, 10 cents per gallon, in addition to the present duty.—On window glass, above ten inches by fifteen, 5 dollars for every 100 square feet, and charging all window glass imported in sheets, uncut, with the same rate of duty.—On phials and bottles, not exceeding the capacity of six ounces each, 1 dollar 75 cents per gross.—All cotton cloths (except nankeens from China) of which the cost, together with the custom-house additions, shall be less than 35 cents

the square yard, shall be deemed to cost 35 cents, and duty charged accordingly.

† It is true that, including her colonial possessions, the same remark applies to Great Britain; and, on this very ground mainly rests that "British system" of protective duties.

‡ This point is well stated by Mr. Rush, secretary of the treasury, in his report to congress, in 1817. "The United States," says Mr. R. "are distinguished in this respect, by a lot as peculiar as it is favourable. Nothing can exceed the inducements to various and subdivided traffic, that abound within their own limits. It is here that the economist may hope to see exemplified every essential advantage of the foreign and home trade, blended in the same system, moulded by the same policy, and freed from the jealousies that have frustrated and must ever continue to frustrate, the benevolent, but impracticable theories of commercial intercourse as between distinct nations. It is not merely that the extent of climate and soil in the union are adapted to all pursuits that can give activity and fruitfulness to industry under every form. These are but natural advantages. It is the exchange of the products of industry upon terms the most desirable, and the most gainful, throughout so ample an extent of home dominion, that will exalt such natural advantages to the utmost. It is here that commerce may be carried on freed from every restriction, and probably for the first time, upon a political and geographical theatre so expanded. The appropriate industry of each portion may go into unfettered action; of Louisiana and of Massachusetts, of Georgia and Rhode Island. A vast home trade, resembling foreign trade, as well by intervening distances as the nature of its exchanges, will be prosecuted, whether along the ocean, or the water highways of the interior, untrammelled by tolls or imposts of any kind, and without even the necessity of custom-houses; or giving to such establishments uses only formal. Such a trade can only, however, have its proper value by the extensive success of manufactures. There is nothing else that can impart to labour, in the United States, the necessary variety in its objects, and the necessary regularity and fulness in the demand. There is nothing else can adequately augment and diversify the list of commodities for which the necessities and enjoyments of improved life are ever making calls. There is nothing else will raise up towns on the surface of our territory,††

taken into account before it can be affirmed that any nation can conduct some of the principal branches of manufacture at all, and still more to advantage, it so happens that the United States possess, in a pre-eminent degree, the great requisites of manufactures—water, coal, iron, cheap provisions, and an intelligent and active population: and that in such circumstances they should feel a desire to manufacture their own raw produce, and to be enabled to do so by protection from foreign competition, to say the least, does not appear either unnatural or unreasonable. The general principle of protecting duties being admitted, however, its application to any particular branch of manufacture must depend on its own separate merits, and upon the commercial arrangements existing with other countries. As an example of the latter case, we may cite the duty levied on American flour in British ports, a reduction of which might justify the Americans in diminishing the rate of duty on British cottons or woollens, as a benefit would accrue equal to, or perhaps greater than, the loss incurred. We apprehend the history of American manufactures and commerce will fully sustain the preceding observations.

Having thus briefly noticed the circumstances which have conduced to the establishment of manufactures in the United States, we shall lay before our readers such information respecting the present state of the principal branches of manufacture as we have been able to collect from public documents and other sources. As, however, there are no annual returns made to the government of the gross quantity manufactured of every article, but only of the exports, which comprise a very small portion of the whole, the information we can present, while important, will be inevitably but partial and incomplete.

In the United States, as in Great Britain, the manufacture of cotton has outstripped all its competitors, and claims the first notice: on this subject we shall avail ourselves of information contained in a very able work now publishing at Philadelphia.* The progress of this manufacture, as might be supposed, has partaken of the characteristic energy and vigour of the country. It is only, however, since the introduction of the power-loom, that it can be considered as having been established on a permanent and useful basis; the scarcity of skilful weavers, and the high prices of weaving, had been found serious obstacles to its success, which has been, therefore, se-

cured only by this invention. The first successful experiment with this instrument was made at Waltham, Massachusetts, in 1815, on the coarser fabrics; but so rapid has been the extension of the manufacture, that, besides furnishing the United States with its full supply of the more staple productions, and a considerable export of coarse goods, the beautiful prints of Manchester and Glasgow are imitated in great perfection; and more than half the consumption of the country, in this important branch, is supposed to be now furnished from native industry. The actual extent of this manufacture in the United States, at the present time, (1830,) is matter of estimate only; a very moderate one is believed to be the consumption of 35,000,000 pounds of cotton per annum, manufactured into 140,000,000 of yards of cloth, of which about 10,000,000 are exported, and upwards of 20,000,000 printed; the value, twelve to fourteen millions of dollars; and employing a capital of twenty-five to thirty millions. Several improvements, originating in the country, have been introduced into the manufacture, and the whole process is believed to be performed to as great advantage as in any part of the world. The cottons exported are mostly of a coarse fabric, which are taking the place of the cottons of India, and are known abroad by the name of *American domestics*. They have been extensively imitated by the English, and a competition is going on, between the manufacturers of the two countries, for the possession of the foreign markets. It is thought that the possession of the raw material on the spot, and the use of the comparatively cheap moving power of water instead of steam, with the proximity of the great markets of South America, are advantages in favour of the United States, more than sufficient to counterbalance some disadvantage in the higher cost of machinery, and, as is commonly supposed, in the higher wages of labour. But the labour in the cotton mills producing these goods being wholly performed by females, it has been ascertained not to be materially dearer than the same description of work in England; and as the same labour is not easily applicable to any other branch of industry, it would seem not improbable that the United States will ultimately supply the foreign market with the coarser cottons. The great profits attending this manufacture, in the first instance, attracted to it, in a very short period, a large amount of capital, and produced a violent competition: the consequence has

every commanding point, without which land can never be made to yield the full amount of which it is susceptible, or the farmer be sure of prices steady and remunerating. It hardly need be added, how a course of policy that would infuse augmented vigour

and briskness into a coasting trade, embracing in its range nearly one half of a continent, would tend to enlarge, in all ways, the essential foundation of naval strength."

* *Encyclopædia Americana*, vol. iii. p. 573.

been, a sudden reaction, and great depression of prices, producing considerable embarrassment in those establishments operating with inadequate capital, and unable to meet the shock of impaired credit. But, although individuals may meet with heavy losses by imprudent speculations, there is no reason to distrust the eventual success of the manufacture, which must soon find relief under the increasing consumption of the country. The largest establishments for the manufacture of cotton in the United States, at present, (1830,) are at Dover, New Hampshire; Lowell, Massachusetts; Pawtucket, Rhode Island; Paterson, New Jersey; and in the neighbourhood of Philadelphia and Baltimore. The reduction of price in the raw material, which is now of only one third the value of 1815, has still more extended the manufacture, which, in many instances, supersedes coarse linens, and even hempen sail cloth.*

Woollen factories are numerous in the eastern states; and the manufacture of this article excites a deep and general interest in the republic, as the production of the raw material is not confined to one portion of the country, but may be profitably pursued in some parts of nearly all the states. The protection of this manufacture was one principal object of the tariff of 1828. That without further protection both the manufacture and the growth of wool would have been abandoned, was made very apparent in the evidence tendered to the committee of manufactures appointed by congress early in that year. It appeared that several of the joint-stock manufacturing

companies† had never paid any dividends on the capital subscribed, and that not from losses by bad debts or mismanagement, but from the reduction of the price of woollen cloths through importation from Europe. The increase of duty (for the details of which we refer to Table, No. I. at the close of this chapter,) on foreign cloths, has led to great activity in the woollen manufacture, and at the present time it is in a very prosperous state. The demand for wool is so great, that large quantities are imported from Europe, and the price of native wool has risen from 50 to 100 per cent., an advance, however, which cannot long be sustained; but unless great caution is used, it will lead to a most injurious reaction and depression. To enter into details respecting particular factories would be unnecessary in this part of the work, as they will be noticed, in a subsequent department, in the respective localities in which they occur. This observation will apply to the other articles of manufacture which remain to be noticed. Before leaving the subject of woollens, however, we regret to be compelled to add an observation not all to the credit of the commercial world:—there appears to be too much reason to apprehend that the duties to which the several descriptions of woollens are subject according to their quality,‡ are extensively evaded by means of false invoices and *false oaths*. One great evil of high protecting duties is undoubtedly the strong temptation it affords to men, whose only deity is gold, to enter on a system of fraud, and consequently to ruin those in the same line of business.

* The following details respecting the operations of a cotton factory, near Springfield, Massachusetts, in the summer of this year, are not without interest. "There are about 15,000 spindles in operation, and from 10,000 to 13,500 yards of cloth manufactured daily—20,000 spindles are soon to be at work. About 800 hands are employed—700 of these are females, who earn from 12 to 21 dollars a month: they pay 8 dollars for board, washing, &c.; but they all work by the piece, and some clear 18 dollars monthly. The village contains 1,400 souls: it is inhabited only by persons employed in the factories, or their families. The agent receives 3,000 dollars a year, the superintendent 2,000, and the concern is said to yield 10 per cent. on the capital invested."

† The statement of the superintendent of the Oriskany Woollen Manufacturing Company, before the committee of manufactures, affords some interesting information respecting the management and operations of similar institutions: although, of course, they vary from each other, both in extent and in some points of management. "The officers of the company," says Mr. Dexter, "are five directors, who receive, each, 2 dollars for every attendance at the meetings of the board. The number of these meetings averages about four annually. The board appoints, from its own body, a president, secretary, and treasurer. The president and secretary receive nothing as compensation. The treasurer receives 50 dollars per annum, over and above his pay as a director. A superintending agent, who is paid 800 dollars per annum, and is furnished with a house and garden, rent free; and a clerk of the store, who receives about 10 dollars per month, and is boarded. The company employs in its service one head carder, at a salary of 400 dollars per annum, who boards himself, as do all the hands employed in the factory, except three apprentices, who receive

board and clothing; one machinist, at 1 dollar 50 cents per working day; one superintending weaver, at 1 dollar 37 1-2 cents per working day; one principal fuller; one presser, &c.; two hands in the finishing room, and one dyer, each at 1 dollar 25 cents per working day; ten hands in the spinning and carding rooms; two assistant carders, and one assistant in and about the dyeing house, each at 1 dollar per working day; and one watchman, also at 1 dollar per day, for every day; one fireman, at about 80 cents per day, and two or three other labourers, getting wood, &c. at about 75 cents per day, each. These include all the labouring men I can now recollect. One girl to letter the cloth, at 4 dollars per week; twenty-four women and girls, at 3 dollars each per week; and eighteen or twenty women and girls, at 2 dollars 50 cents each per week. The residue of the hands are young boys and girls, whose wages will vary from 1 dollar 25 cents to 2 dollars per week, each. The whole number employed will range from 80 to 100. Also, an assorter of wool, at about 30 dollars per month, and an assistant assorter, at about 20 dollars per month. The working hours, summer and winter, are, I think, eleven in number. They commence work at five o'clock in the morning, in winter, and, I think, in summer also. The leisure for breakfast and dinner is thirty minutes each; but at what hour they break off for breakfast I can not say; for dinner, it is at 12 o'clock at noon. Each person employed is held to work eleven hours for a day's work; if any works less time, it is deducted; if more time, he is paid extra in proportion to the time. When there is a hurry, the hands are induced to work one and two hours over the regular time, each day, for which they are compensated."

‡ See Table, No. II. at the close of this chapter.

who are too honourable to descend to such practices. We hope, however, there may be some other method of accounting for facts which appear at first sight to admit only of such an unpleasant and disgraceful solution.*

Household manufactures of woollen, linen, and cotton, are carried on to a great extent. Many thousands of families spin and make up their own clothing, sheets, table-linen, &c. They purchase cotton yarn, and have it frequently mixed with their linen and woollen; blankets, quilts, or coverlets, in short, nearly all articles of domestic use, are chiefly made in the family. It is supposed that nearly two thirds of all the clothing, linen, blankets, &c., of those inhabitants who reside in the interior of the country, are of household manufacture. It is the same in the interior with both soap and candles, the inhabitants happily having no exciseman to prevent their making those articles at any time or to any extent in the family.

Next in importance and amount to the manufacture of wool is that of iron. The abundance in which the ore is found, and in the immediate vicinity of coal, has naturally promoted the erection of forges in various parts of the union, but particularly in the state of Pennsylvania. As in other cases during the war, many extensive establishments were erected, and were very successful; but the return of

* That our mercantile readers, who may feel peculiarly interested in this subject, may clearly apprehend the charge, as stated by the American manufacturer, we insert an extract from a letter, inserted in Niles' Register, of July 2, 1831:—"A cloth of 6-4 wide (which is the ordinary width) costing 6s. 9d. sterling, or 1 dollar 50 cents per running yard, being the highest cost which can lawfully come in under the 1 dollar minimum, can be imported at 2 dollars 53 cents, which includes cost, duties, and expenses of importing; add to this, 25 cents per yard for credits on sales, commission, guarantee, &c., making up the whole cost, and expenses of sale, to 2 dollars 78 cents per yard for dollar minimum cloths; if they will sell at 3 dollars per yard it is a clear profit on the investment of 15 per cent. If the cloth cost but 8s. sterling, and pays the lawful duty, which is 1 dollar per yard more than on the cloth costing 6s. 9d., it must sell for 4 dollars per yard to pay the cost and charges, and remit to the owner his net cost of 8s. per yard, without any profit. If a cloth cost 9s. sterling, it must at least bring 4 dollars 30 cents to pay cost. If it cost 10s. it must bring 4 dollars 60 cents. If it cost 11s., 5 dollars to pay the cost.

"Merchants will not long carry on business that yields no profit, either on one or the other side of the Atlantic. On the contrary, it appears that some classes of importers appear to have made profits beyond all belief, or have suffered heavy losses. Thousands of pieces of cloths have been sold in this market by private and public sale, at the prices of between 3 1-4 and 4 1-4 dollars per yard, mostly at 3 1-4 and 3 3-4 dollars, and the sellers were well satisfied, as I am informed, with the prices they obtained.

"All cloths that cost but 6s. 9d. sterling per running yard of 6-4 wide, paying the dollar minimum duty, and which sell

At 3 dollars per yard, yield a clear profit of 15 per cent.	
At 3 dollars 25 cents do. do. do.	31 do.
At 3 dollars 50 cents do. do. do.	53 do.
At 3 dollars 75 cents do. do. do.	75 do.

peace, and the consequent influx of pig and bar iron from Europe, annihilated a very large proportion of them, the price of iron being reduced to fifty-five or sixty dollars per ton, which was less than the cost of manufacture in America, except under very favourable circumstances. The following statement of facts and estimates, showing the nature, extent, and results of the iron-making business, as conducted in the state of New Jersey, deposed by Mr. Jackson before the committee on manufactures in 1828, affords a very clear and interesting development of the state of the trade at the time, and, with the information subsequently given, will enable any individuals, who might be inclined to embark capital in this branch of American manufactures, to form a tolerably correct idea as to the probabilities of success:—

I. The Nature of the Business.

The iron-making business in this section of country is principally conducted by persons who have severally commenced their operations by the purchase of a tract of land embracing the necessary water-power for propelling the works, and affording a sufficient quantity of timber to supply them with fuel for a number of years. In the improvement of such tracts, the first step is the erection of a dam; a forge, or iron mill, which usually contains two fires; two pair of bellows; one hammer, anvil, and the harness connected therewith; two water-wheels to move the bellows and ore stampers, and one for the hammer; a coal house; a smith's shop; and dwellings for the owner and workmen. The business then proceeds in the employment of the necessary workmen, such as wood choppers, colliers, teamsters, and forgemen;

If they cost but 3d. sterling more than 6s. 9d. they, of course, come under the 2 dollar 50 cents minimum, and are subject to a duty of 1 dollar per yard more. Thus, if a cloth cost but 7s. sterling per running yard of 6-4 wide, pays the lawful duty, and sells for but

3 dollars, it produces a loss to the owner of 55 per cent.	
If at 3 dollars 25 cents the loss is	38 do.
If at 3 dollars 50 cents the loss is	23 do.

"To an intelligent public I appeal, whether either of these two cases is probable. That the market has been well stocked with cloths selling at 3 1-4, 3 1-2, to 4 dollars, is notorious; to believe that either can be true, we must consent to the absurdity, that the owners have either realized the enormous profits of from 30 to 75 per cent., or lost from 23 to 55 per cent. There is no mistake in these figures!

"When, therefore, to these calculations, which can not be controverted, the fact is added, that no honest man can import from England (purchased for cash) at a cost of 6s. 9d. a cloth that will sell, taking the average of all colours, for more than 3 dollars per yard, can a doubt remain? The writer has in vain tried to have cloths bought in England at 6s. 9d. that would sell for more than 3 dollars; and he asserts fearlessly, (and challenges proof that he is in error,) that the whole average of cloths, of all colours, that have been honestly imported at 6s. 9d. for the past nine months, have not sold in this market above the average of 3 dollars per yard,—many cloths would not bring that price; and that nearly every yard of cloth that has been sold in this market at 3 1-2 dollars to 4 dollars, has either been smuggled or fraudulently entered, or it produced a considerable loss to the owner; and from what has been previously stated, no doubt can exist, that by fraud only is this market so fully supplied with cloths of this description, thousands of pieces of which have been sold this season, both at public and private sale, and the owner no doubt laughing at our folly and credulity."

and the preparation of teams for carting the coal, ore, and iron. It is the practice of the owners, in the prosecution of their business, to furnish to the workmen, at the works, such supplies of provisions and other necessities as they may require.

II. *The Extent of the Business, and Facilities for enlarging it.*

1st. The amount of iron actually made per annum, so far as the same can be ascertained by the returns from the different forge owners, is 2,750 tons.

2. The amount of capital invested embraces the following items, viz. :—

	Dollars.
Cost of erecting 110 forge fires, now in operation, at an average expense, including machinery, dams, and coal-houses, of 1,500 dollars each	165,000
Amount invested in woodland, allowing each fire to require 750 acres for its support in producing its proportion of the 2,750 tons, made in all, equal to 82,500 acres, at an average price (the water privileges included) of ten dollars per acre	825,000
The expense of teams, tools, &c., for each fire, is 500 dollars	55,000
Cost of houses for the accommodation of workmen, allowing to each fire five houses, at 200 dollars each, 1,000 dollars	110,000
Amount of floating capital necessary to conduct the business, 500 dollars for each fire	55,000
	Dollars 1,210,000

3d. The number of workmen employed in the business, allowing each fire to require two foremen, two colliers, two cartmen, one coal stocker, five wood choppers, and a carpenter and blacksmith, equal to one hand, are thirteen to each fire, numbering, in all, 1,430 workmen, who, with their families of four persons each, make the number of souls dependant upon the business, 5,720.

4th. The facilities for extending the business are ample. There are now in operation, as appears by this statement, 110 forge fires, producing, on an average, about twenty-five tons each per annum. Were sufficient encouragement afforded, it is presumed that these fires may be made to produce thirty-five tons each per annum, instead of the present quantity, and that a number more of equal ability would soon be put in operation, all of which could be fully supported with charcoal and ore, the materials now used in the manufacture.

III. *The Results of the Business, and Details of the Manufacture.*

	Dolls. cts.
To make one ton of bar iron, it requires	
Three tons of ore, at an average cost of five dollars per ton	15 00
Ten loads of coal, at four dollars per load	40 00
The additional expenses are,	
Stocking ten loads of coal, at 1s. per load	1 25
Small repairs of forge, per ton	1 50
Wages of workmen for making, per ton	16 50
Average expense of cartage and freight to New York, per ton	5 00
	Dollars 79 25

The average price of American bar iron in New York, for most of the time during the last eleven years, has not been greater than it now is, viz. seventy to eighty dollars per ton.

In the above estimate of cost in making the one ton of iron, it is assumed that the coal and ore are purchased by the manufacturer at the current prices. If, however, the coal is made upon his own premises, and the ore raised from his own mine, the following estimate will show the result :—

	Dolls. cts.
Cost of cutting twenty cords of wood, for one ton of iron, at 3s. per cord	7 50
Cooling ten loads of coal, at 12s. per load	15 00

	Dolls. cts.
Carting ten loads of coal, at 8s. per load,	10 00
Stocking ditto, at 1s. per load	1 25
Raising three tons of ore, at 12s. per ton	4 50
Carting ditto, at 8s. per ton	3 00
Wages for making one ton of iron	16 50
Small repairs of forge, per ton	1 50
Cartage and freight to New York, per ton	5 00

Dollars 64 25

Should any allowance be made in the last estimate, for the value of the standing wood used in making the coal, and of the ore in the bed; the following sum should be added to the amount of this estimate, viz.

	Dolls. cts.
Twenty cords of standing wood, at 4s. per cord	10 00
Three tons of ore in the bed, at 12s. per ton	4 50
	14 50
Amount of the last estimate added	64 25

Dollars 78 75

It is perceived that the foregoing estimates include no account of interest of capital invested, decay of works, expense of management, taxes, &c.; nor is any provision made for risks or losses, although the business is greatly exposed to the hazards of both. Were these items estimated, there should be an addition of ten to fifteen dollars per ton, to each of the foregoing estimates. It will also be perceived, that in this statement no estimate has been submitted of the amount of capital invested in mines, or the cost of opening them, from the impossibility of arriving at any thing satisfactory respecting them. It can only be stated, that there are fifty mines in this district already opened, fifteen of which are at present worked, and that the quantity of good ore is presumed to be inexhaustible.

This statement is, moreover, strictly confined to facts and estimates in relation to manufacturing of bar iron, without any allusion to furnaces, of which there are several, or to rolling mills, of which there are four in the district, three situated at Dover, and owned by Messrs. Blackwell and M'Farlan, of the city of New York, which annually convert into rolled iron 1,000 tons of the manufactures of the district; and the other at Rockaway, owned by Colonel Joseph Jackson, capable of rolling about 400 tons more,

On a cursory view of this subject, it would be matter of surprise that the manufacture of iron from native ore should have continued to exist in the United States; but another statement of the same witness throws a light not only on this particular subject, but indicates one of the peculiar advantages which tend to counterbalance some of the unfavourable circumstances with which manufactures in America have to contend. The committee very reasonably inquire, "If the business of manufacturing bar iron is as bad as you represent it, and if others in your neighbourhood have failed in it, how have you been able to sustain yourself; and why have you continued the business?" To which Mr. Jackson makes the following reply: "I have been able to sustain myself because I carry on a farm, and the manufacturing establishments furnish a good market for my farming produce. I also keep a store, and pay for a share of the labour of my workmen out of the store, and get a profit on my goods. I have

also, a grist mill and a saw mill, which have aided me in my buildings, &c. ; but establishments unconnected with these, or like advantages, have failed. My rolling mill, also, enables me to do more business, and upon which I get a little profit : and I have continued to hope for better times. I have, also, some government contracts, which have assisted me, not so much by an advance of price, as by a sure market for a large quantity ; which enabled me to proceed with certainty, and without being subjected to the fluctuations of the market for the manufacture."

In consequence of this state of things, an advance of duty, averaging from five to twenty-five per cent. on that already imposed on foreign iron, was enacted.* The method in which this duty was arranged appears, however, to have been much more in favour of the proprietors of the iron mines and smelters than of the manufacturers of hardware, the advance of duty being on iron rolled ; also, on slabs, blooms, and loop, or other wire, from thirty to thirty-seven dollars per ton, or nearly twenty-five per cent. ; while, on manufactured articles, as axes, knives, &c., the advance was only ten per cent., the alteration being, manifestly, nearly fifteen per cent. in favour of the British manufacturer. The "Petition of the Iron Manufacturers of Philadelphia, presented to congress in the session of 1831," states, that under these enactments, even "horseshoes" have become an article of considerable export from Britain. If the statements of the manufacturers of Philadelphia should not prove erroneous, which, from the very extensive orders executed this year at Sheffield and Birmingham, we apprehend will not be the case to any material extent, the history of the past would lead us to expect that congress will speedily remedy what they will deem an anomaly in the "American system."—Among articles of which iron forms the material, steam-engines now undoubtly claim the first rank ; and the Americans are remarkable for the number of these admirable machines, both on land and water. Although the demand for them is constantly increasing, such is the skill which competition has brought to bear on this important article, that an engine, which, a few years since, would have cost 2,000 dollars, may now be purchased for 800 dollars.

Glass, both for windows and domestic purposes, is manufactured extensively in the United States, principally at Pittsburgh. The price of this article has much declined, owing chiefly, if not entirely, to internal competition,† a healthy process indeed, when

not carried to excess ; but sometimes a direful disease, that may be termed the "madness of the few for the gain of the many," if, indeed, in some cases, it may not be more truly said, "for the gain of none." When it is carried to the extent of destroying, not only the master's profit, but the value of the labour of the mechanic, it is the madness of the few for the destruction of thousands ; a result which has accrued to a lamentable extent in Great Britain. Happily, however, the American labourer is as yet, by the quantity of unoccupied land which still remains, protected from this deplorable result of the folly of his master, and, consequently, it is found, that, while the prices of articles of glass have declined in value at least fifty per cent. within a few years, there has been "a great uniformity of wages" during that period. "In 1808," says Mr. Bakewell,‡ "we sold common flint half-pint tumblers at two dollars per dozen ; after the currency of the state became settled, we sold them at one dollar per dozen ; and now we sell them at about eighty-one cents per dozen. Plain quart decanters, which, in 1808, we sold at six dollars per dozen, we now sell at two dollars and twenty-five cents. Wine glasses, in 1808, were one dollar and fifty cents per dozen, and they are now seventy-five cents per dozen."

Earthenware of the coarser kinds has long been manufactured in various parts of the Union ; and recently, the finest qualities of china ware have been attempted, and with considerable success.

The manufactories in the eastern and northern states not only supply those states with hats, but they send large quantities to the middle, southern, and western ; and have nearly excluded the British hat-manufacturer from the market. It is only a few years since, that all who had any pretensions to gentility, purchased hats at eight or ten dollars each : these certainly were handsome, well-made beaver hats. Lately, however, other hats have been introduced, which at first look equally well with those expensive ones, and very few now purchase the high-priced hats. The amount of hats manufactured in the United States is stated to be 13,000,000 dollars annually.

Shoes and boots are made in great quantities, and may be purchased at very low prices, particularly in Massachusetts and New Jersey. Boots are sold wholesale at from two to three dollars per pair ; shoes from three quarters to one dollar per pair. Many boots and shoes are made with wooden or copper pegs, with which, instead of stitching the soles, they fasten them

* See Table, No. I. at the end of this chapter.

† Some addition to the import duty was, however, made in the tariff of 1828.—See Table, No. I.

‡ Report of the Committee on Manufactures, 1828, p. 149.

together, and the price is rather less. The eastern export many shoes to the middle and southern states; the latter, indeed, are almost entirely supplied from thence, very few shoes being now imported from Great Britain, while the annual value of the boots and shoes manufactured in the United States is said to be 26,000,000 dollars.

All articles in wood, household-furniture, and carriages of all kinds, are executed in great variety. We have been surprised to find, however, that notwithstanding the beautiful descriptions of wood which the American forests yield, chairs, and other articles of domestic furniture, are, for the most part, painted. Articles of furniture are, in most instances, rather cheaper than in England.

Ship-building is carried on to a great extent. In some years, the amount of tonnage has equalled, if not exceeded, that launched in Great Britain; at any rate, the United States are second only to ourselves in this noble art.* In steam-boats, or more properly, steam-ships, they far outstrip us, their mighty internal waters affording such admirable scope for those vessels. It is said that upwards of thirty have been built this year between Pittsburgh and Louisville alone, in addition to 250 already employed in navigating the Mississippi, or its tributary streams. The magnitude of these vessels bears full proportion to their number, some of them consisting of three stories, containing a variety of apartments, and making up

* The Americans may be excused for deeming the British second to themselves.

† Curious as the fact may seem, there are strong grounds to suppose that stereotyping had occupied the attention of a philosopher of New York, long before the practice of the art became popular abroad. We allude to the singular circumstances developed in the correspondence between Lieutenant Governor Colden and Dr. Franklin, which we are induced to insert, from the American Medical and Philosophical Register, edited by Drs. Hosack and Francis, and published in New York, 1810.

"An original paper of the late Lieut. Gov. COLDEN, on a new method of PRINTING discovered by him; together with an original letter from the late Dr. FRANKLIN, on the same subject; and some account of STEREOTYPING, as now practised in Europe, &c., by the Editors of the Register.

"As the art of printing has, without question, been of very great use in advancing learning and knowledge, the abuse of it, as of all other good things, has likewise produced many inconveniences. The number of books printed on the same subject, most of which are nothing but unskilful and erroneous copies of good works, written only for ostentation of learning, or for sordid profit, renders the path to knowledge very intricate and tedious. The reader, who has no guide, and the greatest number have none, is lost in the wilderness of numberless books. He is most commonly led astray by the glaring appearances of title pages, and other artifices of the mystery of bookselling. It is likewise a common complaint, that a poor author makes nothing near the profit that the bookseller does of his labour; and probably, the more pains the author has taken, the more difficult the performance, and the more masterly it is done, the less profit to him; for the good books, like jewels, never lose their intrinsic value; yet, they have fewer purchasers than Bristol stones, and the sale of them is slow.

200 beds. In 1830, the amount of tonnage of steam-boats was 54,036 tons.

Locomotive engines are now built in this country. Mr. R. L. Stevens, of New York, who is extensively connected with rail-roads and steamboats, has lately constructed a locomotive of increased powers, and superior to any hitherto in use.

The manufacture of paper, type, and books, is scarcely surpassed by that of any equal number of inhabitants in the world. Of the first of these, there are many very extensive manufactories. The business of type founding is carried on to a great extent in the American states, and stereotyping has become a matter which involves a large capital, and engages many workmen; among the most prominent individuals occupied in these branches of industry are the Messrs. Conner & Cooke, White, Hagar, & Co., Bruce & Co., Pell & Brother, of New York; Lyman, of Albany; Johnson & Smith, of Philadelphia; and the Boston type and stereotype foundry, in Boston. One is found in the west, where, only thirty years ago, a settlement was scarcely made. The vast number of publications which are issued from the American press at the present day, by means of stereotype printing, is scarcely credible to one who has not closely investigated the fact; the consequent cheapness of books is such, that literature, comparatively speaking, is scattered among the people for the smallest consideration.† The daily and weekly periodicals con-

"As the lessening or removing of some of these inconveniences may be of use to the republic of letters, I hope to be excused in making the following attempt for that purpose, by proposing a new method of printing.

"Let there be made of some hard metal, such as copper or brass, a number of types, or rather matrices, on the face of each of which, one letter of the alphabet is to be imprinted *en creuse*, by a stamp, or such other method by which the matrices for founding of type are commonly made. They must be all of the same dimension, as to breadth and thickness, with that of types, but half their length seems sufficient. Their sides must be so equal and smooth as to leave no vacuity between them when joined. There must likewise be a sufficient number of each letter or character to compose at least one page in octavo, of any book.

"These matrices, I suppose, may be cast in a mould, or a plate of copper may be divided exactly into squares, and the letter or character be stamped into the middle of each square, and the squares afterwards cut asunder by a proper saw. The best method of making these will be easily discovered by those whose business it is to make founts for printing types.

"When a sufficient number of each letter and character is obtained, they are to be placed in the same manner that types are, when composed for printing, only that they must all stand directly as they are read, and as they will appear afterwards on the paper.

"The composure of one page, after it is carefully corrected, is to be placed in a case or mould, fitted to it, of the length and breadth of the page, and of such depth as to cast a plate a quarter of an inch thick, which will perfectly represent a page composed in the common manner for printing.

"As to the art of casting the plate perfect, founders and type makers must be consulted; for the composition of the metal, and for the flux for running it clean and clear, so that no vacuities be left; for which purpose, I am told, that the funnel, by which the

sume a large quantity of paper, being estimated at nearly a thousand. The principal publications will claim our attention as connected with literature, more

melted metal is poured in, being made large, and the filling it with the melted metal after the mould is full, is of use to make the letter every where full and complete. For, by the weight of the metal in the funnel, the liquid metal in the mould is pressed into every crevice. The funnels extending the whole length of one of the sides, gives, likewise, free vent to the air.

"Or, after a page shall be composed, as before mentioned, and the types and matrices well secured in a frame upon a strong plate, they may, by a screw, be pressed upon a sheet of melted lead, and thereby a plate of lead be procured, representing as the former a page composed of types for printing. Which of the methods are most practicable artists can best determine.

"After the page shall be thus formed, the matrices may be loosened and dispersed into their proper boxes, and may serve for as many other pages as types in common printing do.

"When a number of pages, sufficient for a sheet, are thus made, they may be carried to any printing press, and such a number of sheets as shall be thought proper be cast off, and then be laid by till more copies be wanted.

"I choose an octavo page, because, if the page title and page number be left out, as likewise the directions and signatures at the foot of the page, by joining two pages together, it may be made a quarto, or by joining four, a folio. Thus several editions in octavo, quarto, and folio, may, at once be made, to suit every buyer's humour.

"The page titles, number, and bottom signatures, may be cast in small moulds apart, and joined, as may be proper.

"The most convenient size of a page is that of small paper, so as to fill it up, and to leave very little margin; then by adding the page titles, or marginal notes, or notes at the bottom, all cast in frames separately, the large paper may be sufficiently filled.

"I believe that this method of printing, every thing considered, will not be more chargeable than the common method. A thousand, or some thousands sometimes, of copies, are cast off at once in the common method, and the paper and pressman's labour of what is not speedily sold may or must lie dead for some years, whereas in this method, no more need be cast off at a time than may well be supposed to sell speedily. If I be not mistaken, the metal necessary for one sheet will not exceed the value of four hundred sheets of paper, and in the common method several hundred sheets lie useless for, sometimes, many years. If the book should not answer, there is a great loss in the paper, whereas the metal used in this method retains its intrinsic value.

"I shall instance some of the advantages in this method which induce me to communicate my thoughts to others.

"1. An author by this means can secure the property of his own labour.

"2. A correct edition is at all times secured, and therefore may be useful in the classics, trigonometrical tables, &c.

"3. A weak and ignorant attempt on the same subject will be discouraged, for as a new edition of a valuable book is continually secured, without any new expense, booksellers will not readily hazard the publishing of books of the same nature.

"4. But what I chiefly value this method of printing for, is, from the advantages it gives an author in making his work perfect, and in freeing it from mistakes; for, by printing off a few copies of any sheet, and sending them among his friends, and by suffering them to fall into the hands of a malevolent critic, he may have an opportunity of correcting his mistakes, before they appear to the world. By the same means he may make his work more complete than otherwise he could, by the assistance which his friends may give him in several parts of it. It is for these reasons, chiefly, that I propose the plates not to exceed an octavo page, and to have no signatures; for in case of a mistake, the loss of one page may correct the error, and where improvements or additions are necessary, as many pages may be intermixed as shall be necessary, without any inconvenience, and small explications may be made by the marginal notes.

"Lastly. The greatest advantage I conceive will be in the learned sciences; for they often require a long time to bring these to

emphasis than with manufactures. A duty equal to the price of the paper is placed on foreign books, an error of policy we hope soon to see erased from

perfection, and require the assistance of others in many particulars. Many a valuable piece has been lost to the world, by the author dying before he could bring his work to the perfection he designed. Now, by the assistance which he may have by this method from others, this time may be much shortened, and the progress he has made may be preserved for others to continue in case of his death. An author may publish his work in parts, and shall continue, in many cases, to complete and make them more perfect, without any loss of what was done before. By this method likewise, a man of learning, when poor, may leave some part of his estate in his own way for a child, as mechanics often do for theirs.

"Whether the method I propose will answer the end designed; or whether it be practicable, I can not with sufficient assurance say; because we have no artists in this country who can make the experiment, neither can they have encouragement sufficient to tempt them to make the trial. However, I hope to be excused, by the use of the design, and as it may chance to give some hint to a skilful person to perform effectually what I only aim at in vain.

"If the charge of lead or metal plates be thought too great, I know not but that the impression may be made on thin planes of some kinds of wood, such as lime tree or poplar, which have a soft smooth grain when green, and are hard and smooth when dry.

"Ever since I had the pleasure of a conversation with you, though very short, by our accidental meeting on the road, I have been very desirous to engage you in a correspondence. You was pleased to take some notice of a method of printing which I mentioned to you at that time, and to think it practicable. I have no further concern for it than as it may be useful to the public; my reasons for thinking so, you will find in the inclosed copy of a paper which I last year sent to Mr. Collinson, in London. Perhaps my fondness for my own conceptions may make me think more of it than it deserves, and may make me jealous that the common printers are willing to discourage, out of private interest, any discovery of this sort. But as you have given me reason to think you zealous in promoting every useful attempt, you will be able absolutely to determine my opinion of it. I long very much to hear what you have done in your scheme of erecting a society at Philadelphia for promoting of useful arts and sciences in America. If you think of any thing in my power whereby I can promote so useful an undertaking, I will with much pleasure receive your instructions for that end. As my son Cadwallader bears this, I thereby think myself secured of the pleasure of a line from you by him."

"PHILADELPHIA, November 4, 1743.

"Sir,—I received the favour of yours, with the proposal for a new method of printing, which I am much pleased with; and since you express some confidence in my opinion, I shall consider it very attentively and particularly, and in a post or two, send you some observations on every article.

"My long absence from home in the summer, put my business so much behind hand, that I have been in a continual hurry ever since my return, and had no leisure to forward the scheme of the society. But that hurry being now near over, I purpose to proceed in the affair very soon, your approbation being no small encouragement to me.

"I can not but be fond of engaging in a correspondence so advantageous to me as yours must be. I shall always receive your favours as such, and with great pleasure.

"I wish I could by any means have made your son's longer stay here as agreeable to him, as it would have been to those who began to be acquainted with him.

"I am, sir, with much respect,

"Your most humble servant,

"B. FRANKLIN.

"Dr. GOLDEN."

"Remarks.—The mode of printing above described is now known by the term *Stereotype*; and it is a curious fact, that the stereotype

the statutes of the United States. A duty of one-fourth the amount (3*d* per pound) would be amply sufficient to secure to American publishers the reprint of all works, the demand for which was sufficient to justify the expense of their being reprinted; so that the present duty has the sole effect of raising the price, and, in many cases, denying possession of a variety of English works to the American public, without any corresponding advantage to their manufactures. There are many works on particular branches of mechanical science, for instance, of which comparatively few copies are printed even in England, and the free circulation of which in the United States cannot be otherwise than an important advantage, but which is prevented by the present state of the revenue laws. Even if the interests of the American printers should for a moment sustain a slight disadvantage, the writer has far too high an opinion of their patriotism to suppose they would suffer that fact, in the slightest degree, to retard the intellectual progress of their country.

process, said to have been invented by M. Herhan, in Paris, and now practised by him in that city, under letters patent of Napoleon, is precisely the same as that spoken of by Dr. Colden, more than sixty years ago.

"It is more than probable that when Dr. Franklin went to France, he communicated Dr. Colden's 'new method of printing' to some artists there, and that it lay dormant until about sixteen years since, when Herhan, a German, who had been an assistant to M. Didot, the printer and type founder of Paris, but then separated from him, took it up in opposition to M. Didot. We have conversed with gentlemen who have seen M. Herhan's method of stereotyping, and they describe it to be exactly what Governor Colden invented. This fact established, there can be no doubt that M. Herhan is indebted to America for the celebrity he has obtained in France.

"Since the above paper fell into our hands, we have endeavoured to obtain information respecting the different methods of stereotyping now in use. The following is the result of our inquiries.

"By a book published in Paris about ten years since, by M. Camus, of the French National Institute, we find that a Bible was printed in Strasbourg, by one Gillet, more than a hundred years ago, with plates similar to those now used by Didot and Herhan, but not by any means so perfect. Gillet's moulds were made of a fine clay, and a particular kind of sand found only in the neighbourhood of Paris. It is also stated that a number of other ingenious men had at various times produced plates tolerably perfect, by different processes, but we may safely infer, from the art having made no great progress until the time of Didot the elder, that their endeavours had not been crowned with much success.

"At the beginning of the French revolution great quantities of paper money becoming necessary to supply the deficiency of specie either concealed or sent out of the kingdom by the rich, Didot was applied to by the national assembly to invent some kind of *assignat* or bank-bill, which should not easily be imitated; and at this period it was that M. Didot first directed his attention to the means of producing, *in relief*, a set of plates, to print on a common printing-press, which were exactly *fac-similes*, and could not without much difficulty be falsified. This process was termed *Polytyping*; as the mould in which the plates were cast was durable, and would produce any number of copies; the usual mode of stereotyping being, as the French term it, *a moule perdu*; it being necessary to make a new mould for every plate.

"But as M. Didot's views were by degrees extended to the cast-

Distillation is extensively, we fear too extensively, carried on in the United States. Some of the distilleries work entirely from molasses, others from grain; the former is distilled into rum, and the latter generally into gin and whisky. These articles,—whisky, gin, and rum, are sold wholesale by the distillers at from thirty-seven and a half to fifty cents per gallon, or about 1*s.* 9*d.* to 2*s.* 3*d.* per gallon sterling. When cider is made, a considerable quantity is fermented, and distilled into what is called apple-brandy: this is sold at the same price as American gin. Peaches are also fermented, and distilled into what is termed peach-brandy; the wholesale price is from a half to three quarters of a dollar per gallon. More than thirty millions of gallons of ardent spirits are annually distilled and consumed in the United States. A considerable check has been given to this manufacture, and numerous distilleries have been closed, by the exertions of temperance societies, whose operations will require notice in a subsequent section of the work.

ing of pages for book printing, he found it unnecessary to use durable moulds, and therefore, after a year's experiment, invented a composition, which, like the sand used by brass-founders, might be wrought over again for different casts. The elegant editions produced by M. Didot and sons, are the best proofs of his success.

"When the fame of M. Didot's invention reached England, Lord Stanhope, an ingenious and wealthy nobleman, whose time and fortune are principally devoted to the advancement of the arts, made propositions to Mr. Andrew Wilson, of Wild court, Lincoln's Inn Fields, proprietor of the Oriental press, to assist him in such experiments as might bring to perfection a new mode of stereotyping, of which his lordship had obtained some ideas. Mr. Wilson embraced the proposal; and after four or five years of incessant labour, they attained nearly all the advantages they had contemplated. Mr. Wilson, in the year 1802, built his foundry in Duke street, Lincoln's Inn Fields, and in the following year disposed of the secret for six thousand pounds sterling, and some future advantages, to Mr. Richard Watts, for the use of the university of Cambridge. In the year following he disposed of it on similar terms to the university of Oxford.

"About two years ago, a brother of Mr. Watts, of Cambridge, began a course of experiments in this city for a more cheap and easy manner of stereotyping, than any hitherto discovered; and, in spite of innumerable disadvantages, has succeeded beyond his utmost expectation. We have seen plates of his casting of the greatest perfection and beauty. The chief difficulty he has experienced arose from the jealousy and illiberality of the common type-founders, who refused to lend the little aid he required of them. It is agreeable to us, however, from our own observation, to be able to state, that, by uncommon perseverance through accumulated obstacles, Mr. Watts has invented a method of casting the common types much more perfect than those made in the usual way; and now will proceed with his plates without the assistance of other artists.

"The principal defects in M. Didot and Lord Stanhope's process, arise from the softness of the moulds they employ, which are composed of plaster of Paris and some other ingredients. In taking them from the page, of which they are intended to cast a perfect copy, some part of the composition will always remain in the type, and leave the mould imperfect. After the plates are cast, there is consequently much work for an engraver, to make them fit for use. Mr. Watts' mould, being of solid materials, no such inconvenience can arise."

The minerals of the United States, the procuring and smelting of which is a species of manufacture, besides iron and coal, are lead and copper.* The first is found in considerable quantities in several parts of the Union. In the Huron country, where the mines have only been worked three years, under every disadvantage, thirty millions of pounds of lead have been produced. Only about a mile square of surface has yet been opened, and from this, thirty

millions of pounds more might be extracted without opening a new mine. The whole of the lead district occupies a surface of one hundred miles square, including, however, a district of copper ore about twenty miles long, and four or five broad. Mines of lead and copper abound also on the Missouri. The quantity of lead produced at the United States lead mines annually, from 1823, to the 30th of September, 1829 is exhibited in the following table:—

	Fever River.	Missouri.	Total.
	Pounds.	Pounds.	Pounds.
To 30th of September, 1823	335,130	...	335,130
To " " 1824	175,220	...	175,220
To " " 1825	664,530	386,590	1,051,120
To " " 1826	958,842	1,374,962	2,333,804
To " " 1827	5,182,180	910,380	6,092,560
To " " 1828	11,105,810	1,205,920	12,311,730
To " " 1829	13,343,150	1,198,160	14,541,310
Total pounds	31,764,862	5,076,012	36,840,874

The Galenian, a news journal, furnishes a table of the quantity of lead annually made at the lead mines in the United States, from their first opening in 1821 to 1833, inclusive. The statement contains a remark that the lead is less abundant this spring than at any preceding times, and that, comparatively speaking, little will be made this year. The whole quantity made during the twelve years mentioned, is set down at 63,845,740 lbs., of which 7,941,792 lbs. were made during the year 1833. The mining business during that time seems by the table to have fluctuated without any perceptible law of increase. The quantity of lead raised in 1828, was more than twelve millions of pounds, and the next year more than fourteen millions and a half. It fell in 1832 to little more than four millions. This variation arises, we sup-

pose, from the want of a regular plan of operations, a deficiency of capital, and the uncertain tenure by which the lead mine lands are held.

The quantity of the various manufactures exported throws considerable light on their progress and present state; but the statements illustrative of that subject connect themselves more properly, and indeed inseparably, with commerce, and will form the materials of a considerable portion of the following chapter. From them it will be evident that several important articles, which, a few years since, were articles of import only, are already become exports of a very considerable amount.

The first table appended to this chapter exhibits a comparative view of the several tariff laws which have been enacted in the United States; and the second shows more precisely the size and value of which the several articles of manufacture must be, to come within the respective gradations of duty.

* The gold mines of the Carolinas and Georgia have been noticed in Book ii. Chap. ii., where, also, will be found particulars respecting lead, copper, mercury, iron, coal, &c.

TARIFF.—TABLE I.

A COMPARATIVE VIEW OF THE TARIFF LAWS.

PROTECTING TARIFF OF 1828.	PROTECTING TARIFF OF 1824.	OLD TARIFF UP TO 1824.
<p>Iron, in bolts or bars, not rolled, 1 cent per lb.</p> <p>—, rolled also in slabs, blooms, and loop, or otherwise, except pigs and cast iron, \$37 per ton</p> <p>—, in pigs, 62 1-2 cts. per cwt.</p> <p>Wire, of iron or steel, not finer than No. 14, 6 cents, finer than No. 14, 10 cents</p> <p>Round iron, or braziers' rods, 3-16ths to 1-2 inch, nail or spike rods, iron in sheets or hoops, and slit or rolled for bands, casement rods, 31-2 cts. per lb.</p> <p>Axes, adzes, drawing knives, cutting knives, sickles or reaping hooks, sithes, spades, shovels, squares of iron or steel, bridle-bits, steelyards, scalebeams, socket chisels, vices, and wood screws, 10 per cent. additional</p> <p>Steel, \$1 50 cts. per cwt.</p> <p>Lead, in pigs, bars, or sheets, 3 cents per lb.</p> <p>—, shot, 4 cents per lb.</p> <p>—, red or white, dry or ground in oil, 5 cents per lb.</p> <p>—, pipes, 5 cents per lb.</p> <p>Litharge, orange mineral, and sugar of lead, 5 cents per lb.</p> <p>Wool, (the same if on skins,) 4 cents per lb. and 40 per cent. ad valorem until June 30, 1829, then 5 per cent. increase annually to 50 per cent.</p> <p>Woollens, (wholly or in part,) except carpeting, blankets, worsted stuffs, bombazines, hosiery, mits, gloves, caps, and bindings, the value of which, at the place whence exported, (except flannels and baizes,) does not exceed 33 1-3 cents per square yard, to pay 14 cents per square yard; from 33 1-3 to 50 cents, to be estimated at 50 cents; from 50 cents to \$1, at \$1; from \$1 to \$2 1-2, at \$2 1-2; from \$2 1-2 to \$4, at \$4, and to be charged with 45 per cent. duty; and exceeding \$4, to be charged with 50 per cent.; and all unfinished woollens are to be estimated at the same value as if finished</p> <p>Woollen blankets, 35 per cent.</p> <p>Hosiery, mits, gloves, and bindings, 35 per cent.</p> <p>Clothing ready made, 50 per cent.</p> <p>Brussels, Turkey, and Wilton carpets, 70 cents per square yard</p> <p>Venetian and ingrain carpeting, 40 cents per square yard</p> <p>All other carpeting, of wool, hemp, or cotton, or in part of either, 32 cts. per square yard</p> <p>Patent printed or painted floorcloths, 50 cents per square yard; other oilcloths 25 per cent.; furniture oilcloths, and floor matting of flags or other materials, 15 cents per square yard</p> <p>Hemp, \$45 per ton, and \$5 additional annually, from June 30, 1829, until \$60</p> <p>Flax, \$35 per ton, and \$5 in addition annually, from June 30, 1829, until \$60</p> <p>Cotton bagging, 5 cents per square yard</p> <p>Sail duck, 9 cents per square yard, and 1-2 cent additional yearly, from 1828, until 12 1-2 cents, and no drawback on less than 50 bolts in one shipment</p> <p>Distilled spirits, 15 cents per gallon additional on the duties of 1824</p> <p>Indigo, 5 cents additional from June 30, 1829, to June 30, 1830, and 10 cents additional per annum, until the whole duty shall be 50 cents</p> <p>Molasses, 10 cents per gallon, and no drawback on the exportation of spirits distilled therefrom</p> <p>Manufactures of silk from beyond the Cape of Good Hope, 20 per cent. after June 30, 1829</p> <p>Window glass, larger than 10 by 15, and in sheets uncut, \$5 per 100 feet</p> <p>Apothecaries' vials, not exceeding 6oz. \$1 per 75 gross</p> <p>Slates for building, not larger than 12 by 6 inches, \$4 per ton; 12 to 14 inches long, \$5; 14 to 16, \$6; 16 to 18, \$7; 18 to 20, \$8; 20 to 24, \$9; larger, \$10</p> <p>Slates for schools, 33 1-3 per cent.</p> <p>Cotton cloths, (except nankeens direct from China,) of whatever cost, shall, with the addition of 20 per cent. if beyond the Cape of Good Hope, and 10 per cent. if from other places, be deemed to have cost 35 cents per square yard, and be charged with 25 per cent.</p>	<p>90 cents per cwt. or 112 lbs. . . .</p> <p>\$1 50 cts. per cwt.</p> <p>50 cents per cwt.</p> <p>Not finer than No. 18, 5 cents; finer, 9 cents</p> <p>8 cents per lb.</p> <p>Wood screws, sickles, sithes, spades, 30 per cent.; all other manufactures of iron, 25 per cent.</p> <p>\$1 per cwt.</p> <p>2 cents per lb.</p> <p>3 1-2 cents per lb.</p> <p>4 cents per lb.</p> <p>25 per cent.</p> <p>15 per cent.</p> <p>Costing not more than 10 cents, 15 per cent.; higher cost, 30 per cent.</p> <p>Costing less than 33 1-3 cents per square yard, 25 per cent.; all others 33 1-3 per cent. ad valorem, on actual value or cost</p> <p>25 per cent.</p> <p>33 1-3 per cent.</p> <p>30 per cent.</p> <p>50 cents per square yard</p> <p>25 cents per square yard</p> <p>20 cents per square yard</p> <p>30 per cent.</p> <p>\$35 per ton</p> <p>15 per cent.</p> <p>3 3-4 cents per square yard</p> <p>15 per cent.</p> <p>From grain,</p> <p>1st proof 42 cents per gallon . . .</p> <p>2d " 45 ditto . . . ditto . . .</p> <p>3d " 48 ditto . . . ditto . . .</p> <p>4th " 52 ditto . . . ditto . . .</p> <p>5th " 60 ditto . . . ditto . . .</p> <p>higher 75 ditto . . . ditto . . .</p> <p>15 cents</p> <p>5 cents per gallon</p> <p>25 per cent.</p> <p>\$4 per 100 feet</p> <p>\$1 a \$1 25 cents</p> <p>25 per cent.</p> <p>15 per cent.</p> <p>Minimum under some conditions, 30 cents, with 25 per cent. duty</p>	<p>75 cents per 112 lbs.</p> <p>\$1 50 cts. per cwt.</p> <p>50 cents per cwt.</p> <p>Not finer than No. 18, 5 cts.; finer, 9 cents.</p> <p>\$2 50 cents per cwt.</p> <p>20 per cent.</p> <p>\$1 per cwt.</p> <p>1 cent per pound.</p> <p>2 cents per pound.</p> <p>3 cents per pound.</p> <p>20 per cent.</p> <p>15 per cent.</p> <p>15 per cent.</p> <p>25 per cent.</p> <p>15 per cent.</p> <p>25 per cent.</p> <p>30 per cent.</p> <p>25 per cent.</p> <p>25 per cent.</p> <p>30 per cent.</p> <p>\$80 per ton.</p> <p>15 per cent.</p> <p>20 per cent.</p> <p>Russia, \$2 ps.; Ravens, \$2 25 cts. Holland, 50 cents.</p> <p>From other materials,</p> <p>38 cents.</p> <p>38 "</p> <p>42 "</p> <p>48 "</p> <p>57 "</p> <p>70 "</p> <p>15 cents.</p> <p>5 cents per gallon.</p> <p>15 per cent.</p> <p>\$3 25 cents.</p> <p>20 per cent.</p> <p>15 per cent.</p> <p>15 per cent.</p> <p>25 per cent.</p>

TARIFF.—TABLE II.

IMPORTATION OF DRY GOODS UNDER THE NEW TARIFF LAW.

A TABLE SHOWING WHAT DESCRIPTION OF GOODS MAY BE IMPORTED UNDER THE TARIFF PASSED BY THE CONGRESS OF THE UNITED STATES, MAY, 1828.

WOOLLENS, (except Flannels and Baizes,) 33 1-3 Cents minimum, Duty 14 Cents per Square Yard.

Width.	1s.	6d.	sig.	Net Cost, 1828.	Net Cost, 1827.
24 inches.	1.	1-2	"	37 1-2 cts. per yd.	36 cts. per yd.
27 "	1	1-2	"	42 "	40 "
30 "	1	3	"	46 1-2 "	44 "
33 "	1	4 1-2	"	51 "	49 "
36 "	1	6	"	56 "	53 1-2 "
45 "	1	10 1-2	"	69 1-2 "	67 "
54 "	2	3	"	83 1-2 "	80 1-2 "

Must not exceed these prices per running yard.

BROADCLOTHS, KERSEYMERS, PELISSE CLOTHS, KERSEYS, FOREST CLOTHS, VALENTIA and WOOLLEN VESTINGS and FLANNELS, 50 cents minimum, Duty 45 per Cent. ad valorem.

Width.	1s.	6d.	sig.	Net Cost, 1828.	Net Cost, 1827.
24 inches.	1.	8 1-4	"	57 cts. per yd.	53 1-2 cts. per yd.
27 "	1	10 1-2	"	63 1-2 "	60 "
30 "	1	10 1-2	"	70 1-2 "	67 "
33 "	2	0 3-4	"	77 "	74 "
36 "	2	3	"	84 1-2 "	80 1-2 "
54 "	3.	4 1-2	"	127 "	120 1-2 "

Must not exceed these prices per piece of 45 yards.

FLANNELS, Duty 45 per Cent.

Width.	£s.	17	6	Net Cost, 1828.	Net Cost, 1827.	Duty, 1828.
27 inches.	£3	17	6	\$29 11	\$27 78	\$7 59
28 "	4	0	6	30 23	28 84	7 87
29 "	4	3	0	31 21	29 74	8 15
30 "	4	6	0	32 33	30 82	8 44
31 "	4	9	0	33 44	31 89	8 72
32 "	4	12	0	34 56	32 97	9 00
33 "	4	14	6	35 53	33 86	9 28
34 "	4	17	6	36 65	34 94	9 56
35 "	5	0	6	37 75	36 02	9 84
36 "	5	3	6	38 87	37 09	10 12

Must not exceed these prices per piece of 45 yards.

27 inches.	£2	5	0	\$20 09	\$16 12	
	2	8	0	20 92	17 20	
	2	11	0	21 75	18 28	
	2	14	0	22 59	19 35	
	2	17	0	23 42	20 42	
	3	0	0	24 26	21 50	
	3	3	0	25 09	22 58	\$7 59

30 inches.	£3	6	0	\$26 78	\$23 65	
	3	9	0	27 60	24 73	
	3	12	0	28 44	25 80	
	3	15	0	29 28	26 88	
	3	18	0	30 10	27 95	
	4	1	0	30 94	29 03	
	4	4	0	31 78	30 10	
	4	6	0	32 33	30 52	\$8 44

per piece of 45 yards.

BROADCLOTHS, KERSEYMERS, &c. \$1 minimum, Duty 45 per Cent.

Width.	3s.	0d.	Net Cost, 1828.	Net Cost, 1827.
24 inches.	3s.	0d.	\$1 13	\$1 07 1-2 per running yd.
27 "	3	4 1-2	1 27	1 20 1-2 "
30 "	3	9	1 41	1 34 "
33 "	4	1 1-2	1 55	1 47 1-2 "
36 "	4	6	1 69	1 61 1-2 "
54 "	6	9	2 53	2 42 "

Must not exceed these prices.

BROADCLOTHS, KERSEYMERS, &c. \$2 50 Cents minimum, Duty 45 per Cent. ad valorem.

Width 27 inches.	£0	8	5
" 31 1-2 "	0	9	10
" 35 "	0	11	3
" 54 "	0	15	10
" 53 "	0	19	8

Must not exceed these prices per running yard.

BROADCLOTHS, \$4 minimum; Duty 45 per Cent.

Width 54 inches.	£1	7	0
" 63 "	1	11	6
" 72 "	1	16	0

Must not exceed these prices per running yard.

Woollen Blankets, Woollen and Worsted Hosiery, Gloves, Bindings, and Mitts, to pay a Duty of 35 per Cent. ad valorem.

Brussels, Turkey, and Wilton Carpets and Carpeting, 70 Cents per Square Yard.

Venetian and Ingrain Carpets and Carpeting, 40 Cents per Square Yard.

Cotton Goods, if they do not cost 35 Cents per Square Yard, including the addition of 10 per cent., must pay a Duty of 8 3-4 Cents per Square Yard.

Worsted Stuff Goods, Bombazines, Linens, Lawns, Linen Diapers and Cloths, Cotton Braces, Cotton Hose, Silk and Leather Gloves, Sewing Cottons, Tapes, Small Wares, &c. pay the same Duty as they did previous to 1828.

NET COST TO IMPORT THE FOLLOWING GOODS.

Width.	0s.	9d.	sig.	Net Cost, 1828.	Net Cost, 1827.
24 inches.	0	10	"	30 1-2 cents.	27 cents.
	0	11	"	32 1-2 "	30 "
	1	0	"	35 "	33 "
	1	0	"	37 "	36 "
27 inches.	0	9	"	31 1-2 "	27 "
	0	10	"	33 1-2 "	30 "
	0	11	"	36 "	33 "
	1	0	"	38 "	36 "
	1	1 1-2	"	42 "	40 "
27 inches.	1	6	"	58 1-2 "	53 1-2 "
	1	7	"	60 1-2 "	56 1-2 "
	1	8	"	63 "	59 1-2 "
	2	6	"	1 03 "	89 1-2 "
	2	8	"	1 07 "	95 1-2 "
	2	10	"	1 12 "	1 01 1-2 "
	3	0	"	1 16 1-2 "	1 07 1-2 "
	3	2	"	1 21 1-2 "	1 13 1-2 "
	3	4	"	1 25 "	1 19 1-2 "

Kerseys and Forest Cloths.

CHAPTER III.

COMMERCE AND AGRICULTURE.

COMMERCE has frequently, in the history of nations, evinced the rapidity of its growth, as in the cases of Venice, Holland, and Great Britain; but in no instance has its progress been more remarkable than in that of the United States. It will not be necessary to insert any details respecting the state of commerce while the Americans were under the colonial yoke, since, under the commercial laws then existing, the energies of the colonies were as much as possible repressed, except in subserviency to the interests of the mother-country. During the war of the revolution, the degree of traffic which had previously existed was, of course, suspended; and after the peace of 1785, commerce still laboured under peculiar difficulties. The chief of these resulted from the political constitution which the thirteen "sovereign states" had thought fit to adopt. This subject has already been referred to as affecting the manufacturing interest; but the introduction of some additional particulars, illustrative of its bearing on commerce, will not be deemed unnecessary. The original constitution did not admit of the imposition of any duties by the congress, without the unanimous vote of all the states; while the right which was thus shackled as it respected the general government, was accorded to each of the separate states. It is not, therefore, matter of surprise, that some of the states should have acted in opposition to others, as their interest might dictate. When the state of Pennsylvania laid a duty on foreign merchandise imported, the state of New Jersey, equally washed by the waters of the Delaware river, admitted the same articles free of duty; and they could easily be smuggled into one state from the other. The several states laid different rates of duty on foreign tonnage; in some, one shilling sterling per ton was imposed on vessels, which in other states paid three shillings sterling per ton. Such was the misunderstanding amongst the several states, that there were no general commercial regulations, nor could the congress enforce any, while the opposition of any one of the states could prevent the passage of any act on the subject. The evil of this condition of affairs was flagrantly manifest, when, to provide a fund to discharge the public debt, and to pay the arrears due to the soldiers who fought the battles of the revolution, it was proposed in congress, during the operation of the articles of confederation, to lay a duty of 5 per cent. ad valorem, on foreign merchandise imported into the United States, and the

opposition of the state of Rhode Island was of itself sufficient to defeat this plan.

The nations of Europe were well pleased to avail themselves of the embarrassed condition of the United States; for even those who had assisted them in their struggle for independence, now viewed them with a jealous eye as competitors in the field of commerce; and when, soon after the peace, the republic endeavoured to negotiate treaties of commerce with Great Britain, France, Spain, and Portugal, the offer was in each case met with a refusal. The conviction that this portion of the federal constitution required amendment, was one of the principal reasons which induced the people of the United States to call a convention for its revision. Happily, the convention, when assembled, concurred in the necessity of an alteration on this point, and the new constitution contained the following clauses:—"Art. I. Sect. VIII. To regulate commerce with foreign nations, and among the several states, and with the Indian tribes.—Sect. IX. No tax or duty shall be laid on articles exported from any state. No preference shall be given by any regulation of commerce or revenue to the ports of one state over those of another; nor shall vessels bound to, or from, one state, be obliged to enter, clear, or pay duties in another.—Sect. X. No state shall, without the consent of the congress, lay any imposts or duties on imports, or exports, except what may be absolutely necessary for executing its inspection laws; and the net produce of all duties and imposts, laid by any state on imports or exports, shall be for the use of the treasury of the United States; and all such laws shall be subject to the revision and control of the congress." Not long after the new constitution had been adopted, the secretary of state proposed a liberal system of policy, in relation to commercial intercourse with other nations. His views were detailed in a report, made in answer to a resolution of the House of Representatives, of the 23d of February, 1791. Strongly advocating a free commerce with every nation, the secretary thus expressed himself:—"Instead of embarrassing commerce under piles of regulating laws, duties, and prohibitions, it should be relieved from all its shackles in all parts of the world. Would even a single nation begin with the United States this system of free commerce, it would be advisable to begin it with that nation."

These domestic arrangements had a very favourable influence on American commerce; but a new and most extensive field for it was now opened by the circumstances which transpired in Europe. "The wars consequent on the French revolution

created a demand for our exports," says Dr. Seybert, "and invited our shipping for the carrying trade of a very considerable portion of Europe; we not only carried the colonial productions to the several parent states, but we also became the purchasers of them in the French, Spanish, and Dutch colonies. A new era was established in our commercial history; the individuals who partook of these advantages were numerous; our catalogue of merchants was swelled much beyond what it was entitled to be from the state of our population. Many persons who had secured moderate capitals from mechanical pursuits, soon became adventurers; and the most adventurous became the most wealthy, and that without the knowledge of any of the principles which govern commerce under ordinary circumstances. No one was limited to any one branch of trade; the same individual was concerned in voyages to Asia, South America, the West Indies, and Europe. Our tonnage increased in a ratio with the extended catalogue of the exports; we seemed to have arrived at the maximum of human prosperity; in proportion to our population, we ranked as the most commercial of nations; in point of value, our trade was only second to that of Great Britain."*

In 1790, the aggregate of exports was estimated at 19,012,041 dollars; in 1791 their value was increased by 1,741,057 dollars, or about one eleventh of their amount in 1790. In 1792, the aggregate of the exports amounted to 26,109,572 dollars; the addition in the course of this year was 5,356,474 dollars, or more than one fifth of their total value in the preceding year. In 1793, the exports were estimated at 33,026,233 dollars, or they were augmented considerably above one fourth of their amount in 1792. The value of the exports increased with the progress of the war in Europe; this effect was common to the domestic surplus products, and to the foreign merchandise re-exported. Prior to 1795, there was no discrimination at the treasury department of the value of the domestic and foreign merchandise exported from the United States. In 1795, the aggregate value of the merchandise exported was estimated at 67,064,097 dollars; of this amount the domestic productions were estimated at 40,764,097 dollars, and the foreign produce, re-exported at 26,300,000 dollars. In 1796, the foreign merchandise re-exported was only 2,850,208 dollars less in value than that of the domestic exports; in 1797, the foreign merchandise exceeded the value of the domestic exports by 4,472,903 dollars; during several of the succeeding

years, the value of the foreign merchandise exported greatly surpassed that of the domestic articles; and, in 1806, was estimated at 59,643,558 dollars, or it exceeded the value of the domestic exports by more than one fifth, or 22,47 per cent. In 1805, the foreign merchandise re-exported arrived at the maximum, and amounted to 60,283,236 dollars, and in that year exceeded the value of the domestic productions exported in any one preceding or succeeding year, 1816 and 1817 excepted. The periodical progress of the export trade is exhibited by the following statements, viz. :—

	Dollars.
Total value of the exports from the United States, in 1795	67,064,097
Ditto ditto, 1790	19,012,041
Increase in five years	48,052,056
Total value of the exports from the United States, in 1800	94,115,925
Increase in ten years	75,103,884
Total value of the exports from the United States, in 1805	101,536,963
Increase in fifteen years	82,524,922
Total value of the exports from the United States, in 1806, when they arrived at the maximum	108,343,150
Increase in sixteen years	89,331,109

This astonishing progress could not fail to attract the attention, and to excite the commercial jealousy of the principal nations of Europe; and the war at this time raging between England and France was carried on not only by military and naval armaments, but by commercial codes of restriction and prohibition, by which the Americans, as a neutral power, were more seriously injured than either of the belligerents. Indeed, between the years 1804 and 1807 inclusive, above 1000 American merchant vessels were captured, by nations professedly at peace with the United States, for alleged breaches of blockade, or of commercial decrees. Under these circumstances, the government of the United States, at the close of the year 1807, resorted to an embargo to prevent the destruction of the mercantile navy, which was continued till March, 1809. Thus the export trade of the United States, after having, in the course of sixteen years, from 1790 to 1806, acquired an augmentation of 89,331,109 dollars, was, in 1807, in an instant, reduced to the aggregate of 22,430,960 dollars only 1,677,862 dollars more than the amount in 1791, the second year after the organization of the present government. After the embargo was taken off in

*Seybert's Statistical Annals of the United States, p. 61.

1809, commerce speedily revived, and during that and the following year the amount of exports, so far as related to domestic products, was greater than the average of the ten years from 1802 to 1812. Subsequently to the declaration of war with Great Britain, the export trade of the United States was of course materially and progressively depressed, till, in the year 1814, it did not amount to seven millions of dollars. At the conclusion of the war the exports rose, in 1815, to fifty-two millions; in 1816, to eighty-one; in 1817, to eighty-seven; in 1818, to ninety-three. From 1819 to 1824, the amount ranged between sixty-five and seventy-five millions, the average being above seventy; but, in 1825, the amount of exports again rose to nearly one hundred millions of dollars. From the year 1826 to 1830, the exports have ranged from seventy to eighty millions; the exports of foreign goods have declined materially, the amount for the year 1830 being little more than fourteen millions, a smaller amount than any year since 1803, except that of the embargo, and those of the war, while the domestic exports are nearly sixty millions, an amount exceeding those of any preceding year, since the establishment of the republic, except the years 1816, 17, 18, and 25.

The official returns presented to congress divide the exports into four classes: those of the sea, the forest, agriculture, and manufactures. The following is a summary of the exports of the year 1830; the details will be found in Table, No. I., at the close of this chapter. The products of the sea, consisting of the results of the whale, cod, mackerel, and herring fisheries, exported mostly from the northern states, amount to 1,725,270 dollars, being nearly a thirty-fifth part of the whole domestic export. About one third of this value consists of codfish, and more than half of the products of the whale-fisheries.

The value of skins, furs, ginseng, lumber, staves, bark, tar, pitch, rosin, and turpentine, and pot and pearl ashes, partly from the northern, and partly from the southern states, which were formerly of much greater comparative importance in the trade of the country, now constitutes nearly one fifteenth part of the whole value of the domestic exports, and amounts to 4,192,040 dollars. A large proportion of the trade in these articles, as well as in those of codfish and bread-stuffs, is carried on with the West-Indies, Mexico, and South America. The skins and the furs go to Europe and Canton, the ginseng to Canton, but in less quantity than formerly, and the pot and pearl ashes are sent to England and France.

The chief amount, however, of articles of export

consists, as would naturally be supposed, of the products of agriculture. The article of cotton alone furnishes nearly half the amount of the whole exports of the United States, being, for the year 1830, 29,674,883 dollars. The next article in importance of export is wheat, either as grain, flour, or biscuit, the amount being 6,320,617 dollars. The third in amount is tobacco, 5,586,365 dollars; the fourth, rice, 1,986,824 dollars; the fifth, the produce of swine, including pork, bacon, and live hogs, 1,315,245 dollars. Three of the most important of these articles, (cotton, tobacco, and rice,) amounting collectively to 37,248,072 dollars, are the produce of the southern states, including Virginia and Kentucky. The other agricultural exports, namely, beef, tallow, hides and cattle, butter, cheese, horses, mules, sheep, rye-meal, oats, potatoes, and apples, flax-seed, and hops, are mostly furnished by the middle and western states. Cattle, and their products, including butter and cheese, amounted to 860,053 dollars. This species of export is of far less comparative importance than formerly, being limited to its present amount, not by the capacity for production, but by the extent of demand in the foreign markets; an increase of the foreign demand would very soon double and treble the quantity. Some of the articles comprehended in the above list, though agricultural products, yet involve some process of manufacture; such, for example, as butter, cheese, bacon, flour, biscuit, meal, and part of the tobacco. A great many, however, of the exports coming under the head of manufactures include in them the value of materials supplied by agriculture, such as the cotton fabrics, those of leather, and spirits distilled from grain; so that, on the whole, the strictly agricultural products of the country constitute a larger proportion of the whole exports than the tables represent; and, if we add the value of the materials supplied by agriculture for the manufactured exports, we shall have at least six sevenths of the whole domestic exportation consisting of the raw products of agriculture.

The total amount of manufactured articles exported from the United States, in the year 1830, is estimated in the official returns, at 6,258,131 dollars, being rather more than one tenth of the domestic exports of the country; about 930,000 dollars should, however, be struck out of the list of domestic imports, being gold and silver coin, consisting mostly of metals imported from abroad, and, after being coined at the mint, again exported. The labour put upon these materials, in coining, is so inconsiderable a part of their value, that the amount of the coin of country exported ought not to be included in the esti-

mate of the value of manufactured exports. Considerable quantities of gold, it is true, have been produced in North Carolina, but by no means enough, as yet, to supply the demand for the consumption of the country, though it is to be considered, at the same time, that this article, as far as it is supplied from the domestic mines, will be chiefly exported, being drawn into this channel by the higher price of gold, as compared with silver, in England and France than in the United States. Some of it is arrested for use in jewellery and the arts, but very little in the currency, or in the vaults of the banks. As cotton fabrics also form a large item in this list of exported manufactures, and those fabrics are mostly of the coarser kind, the raw material will constitute a very considerable part of their value, and the proportional value of the direct wages of manufacturing labour incorporated in these exports will be proportionately less. If, for instance, a plough, or trunk, or quantity of combs, be sent abroad, almost the whole value of the export consists of the wages of the manufacturers; and a still greater proportion of the value of earthen and stone wares, which make a very considerable item in this list, is of this description; whereas an export of spirits distilled from West India molasses comprises a comparatively small proportional value of manufacturing labour. Taking the whole list of domestic manufactured articles together, and making allowances for the cost of the raw materials in their rudest state, after they are taken from the ground or from animals, and assume the character of merchandise, by deducting their value from the gross amount of that of the exported manufactures, the remainder, which is the result of the manufacturing labour, interest of capital, and profits incorporated into these materials, to bring them into the state in which they are exported, may be estimated at about 4,000,000 dollars. Of the articles of export on which the arts of the United States are employed, the most considerable are cotton twist, thread, and fabrics, the exported value of which for the year 1830 was 1,318,183 dollars, being more than one fiftieth part of the whole domestic exports, the principal markets of which are South America, Mexico, and the Mediterranean. The value of leather and its various manufactures exported, is 375,250 dollars. Hats exported during the same year amount to 309,362 dollars, a very large sum, considering the short period during which this article has been sent to foreign markets. Soap and candles have long been supplied for the foreign markets, but have lately been on the decline, the amount for the year 1830 being 619,238 dollars. The various articles

manufactured for the most part of wood, such as furniture, or of wood, leather, and iron, such as coaches and carriages, besides various agricultural implements supplied to the West Indies and South America, constitute an important branch of trade. The American glass begins to appear in the foreign markets: the value sent abroad in 1830 was 60,280 dollars, and it bids fair to be increased. The other exports consist of a variety of articles in small quantities, among which are, wearing apparel, combs and buttons, brushes, fire engines and apparatus, printing presses and types, musical instruments, books, maps, paper and stationery, and trunks. It is apparent from the above enumeration and estimates, that the manufactured articles of which the export is most considerable and the most flourishing, are those of which the raw materials consist mostly of cotton, wood, and leather.

The foreign articles imported and again exported from the country during the year 1830, amounted to 14,378,479 dollars. This transit trade thus appears to form a very important part of the American commerce. The principal foreign articles re-exported are cottons, coffee and cocoa, sugar, tea, wines, and hardware.

The imports of the United States are of great importance to the commercial interest of the world, but especially to that of Great Britain; and the regulations respecting their admission, as already referred to in connexion with manufactures, form the most prominent topic of discussion, as a domestic question, in the several states composing the republic. It will therefore neither be uninteresting nor unimportant to exhibit a statement of the amounts of the principal imports, distinguishing the countries from which the greater portion of them are severally received. In doing so, we shall, with some slight deviations, follow the order observed in the annual statements of the secretary of the treasury made to congress, and take as the basis of our observations the statement of the year ending the 30th of September, 1830. The principal articles are manufactures of wool, cotton, silk, flax, and hemp, iron, tea, wine, and earthenware; also raw hides and skins, and gold and silver: there are, however, considerable quantities of a great variety of other articles, the produce or manufacture of the different nations of the globe. The information which the following statements contain, if attentively considered, will afford a more correct idea of the state of the inhabitants of the republic, than the personal narration of any individual, however accomplished or intelligent, and however extensively he may have travelled. It must be borne in mind, that

the imports are consumed by a population scarcely amounting to thirteen millions, and in addition to a greater amount of domestic produce than is supplied by any corresponding amount of population.

The articles first noticed are those admitted free of duty—among these are philosophical apparatus, for the use of incorporated societies for the promotion of learning and science, to the amount of 9,830 dollars, imported in nearly equal proportions from England and France; books, maps, and charts, under the same conditions, to the amount of 19,621 dollars, more than three fourths of which were from England, and the remainder about equally divided between France and Germany, the latter through the medium of the Hanse Towns; specimens of botany and natural history, to the amount of 6,118 dollars, from upwards of twenty different countries; models of invention and machinery, 897 dollars, almost exclusively from England; and anatomical preparations, 274 dollars, from France. The fact that this class of articles is duty free, evinces a laudable attention on the part of the congress of the United States to the interests of science and literature; and we hope that no long period will elapse before every production connected with their advancement, not only in the recognised institutions of the country, but in the pursuits of individuals or families, will be accessible on the same terms. We deem it a sound and incontrovertible principle, that the improvement and expansion of the national mind ought not to be impeded or delayed, either for the revenue of government, or for the gain of individuals. To act on a contrary principle is bartering that which is beyond all price.

The remaining articles which are admitted without payment of duty, are either articles derived from mining or from agriculture, which the United States do not produce in sufficient quantities; or of manufactures in which they do not excel. We can only mention a few of the principal of them, referring our readers for the particulars of the remainder to Table IV. Furs were imported in 1830 to the amount of 305,782 dollars, of which, 205,090 dollars were from England; 64,584 dollars from the British American colonies; 19,363 dollars from France; and the remainder in small portions from nine other countries. Raw hides and skins constitute the largest amount of articles (with the exception of specie) imported duty free, being, in 1830, 2,409,850 dollars, of which, 1,904,251 dollars are from the states of South America;* 85,374 dollars from Hayti; and the remainder

in portions, varying from 100 dollars to 60,000 dollars, from twenty other countries. Plaster of Paris is imported to the amount of 125,606 dollars, of which, 119,234 dollars were from the British American colonies, and the remainder from France. Dye wood to the amount of 279,411 dollars, of which, 161,634 dollars were from South America; 77,078 dollars from Hayti; and the remainder chiefly from the West Indies. Mahogany timber to the amount of 286,825 dollars, of which, 203,948 dollars were from Hayti; 28,917 dollars from Cuba; 25,018 dollars from the Central Republic of America; and the remainder chiefly from Mexico and the British West Indies. Of metals, tin was imported to the amount of 101,341 dollars, of which, 62,862 dollars were from England; 15,450 dollars from the Dutch East Indies; 5,960 dollars from China; 9,007 dollars from the Netherlands; 2,485 dollars from the British East Indies; and the remainder from Chili and Peru: copper is imported to a large amount,—403,203 dollars in bars, 283,785 dollars in plates for the sheathing of ships, &c.; 14,435 dollars for the use of the mint, and 83,413 dollars of old copper to be remanufactured; of the former amount, 231,493 dollars were from Peru; 154,965 dollars from Chili; 14,700 from Colombia; and the remainder chiefly from the British American colonies: the amount for sheathing ships was almost exclusively from England; as was also that for the use of the mint. The amount of gold as bullion, imported in 1830, was 115,267 dollars, of which, 39,557 dollars were from Mexico; 33,022 dollars from Africa; 25,633 dollars from Peru; and 12,056 dollars from Colombia: the amount of gold, as specie, was 705,000 dollars, of which 131,852 dollars were from Colombia; 81,343 dollars from other countries of South America; 69,267 dollars from Cuba; 81,262 dollars from British American colonies, and the West Indies; 81,384 dollars from the Swedish West Indies; 78,534 dollars from the Danish West Indies; 76,356 dollars from the Dutch West Indies; 53,123 dollars from England; and the remainder in small amounts from various countries. The amount of silver imported is much larger than that of gold; the amount in bullion was 1,049,343 dollars; of which, 781,201 dollars were from Mexico; 159,735 dollars from Peru; 75,712 from other parts of South America; 18,719 dollars from Cuba; and the remainder from the Dutch and Danish West Indies, and the South Seas. The silver, in specie, imported in 1830, amounted to 6,285,475 dollars, of which, 3,860,936 dollars were from Mexico; 988,756 dollars from

* In these statements it is found convenient to regard Mexico as one of the South American states, as it is generally included

in that appellation by Americans in their commercial transactions.

South America generally; 273,498 dollars from Cuba; 242,468 dollars from the French West Indies; 237,953 dollars from the British American colonies and West Indies; 161,452 dollars from the Danish West Indies; and the remainder from all other parts of the world.

The total amount of articles admitted duty free, in 1830, was 12,746,245 dollars, of which, considerably more than half, however, was gold and silver; of the remainder, raw hides and skins constituted more than three sixths, or nearly one fourth of the whole amount of articles imported duty free; copper about one sixth; furs, dye wood, and mahogany, one sixth, the remaining sixth being divided among miscellaneous articles, the particulars of which will be found in the Table IV.

It cannot fail to have struck our readers, that, when the gold and silver are deducted, the amount of articles admitted duty free bears an extremely small proportion to the whole amount of imports; and it will appear in the sequel, that duties of a greater or less degree have been imposed, not only on all articles which could be procured in sufficient quantities or could be manufactured in America, but upon

those, also, where there could not possibly be at present any international competition. It is, therefore, probable that duties of the latter kind will be remitted, when, the public debt being discharged, the revenue arising from them will not be required; though but little expectation can exist that the protection afforded to American manufacturers will be diminished.

Of the imports subject to duty, the first, as to amount, is cotton, in its various forms of manufacture. It is hardly needful to state, that the great bulk of this article is supplied from England. The amounts from England, Scotland, and France, will be seen in the following table, which, with similar tables subsequently given of the principal articles of import, has been compiled from the last treasury statement, that of the year 1830. The tables have been so arranged as to exhibit the information contained in that publication in a form more readily apprehended, and also to afford the additional information of the total amount of each article imported from the several countries named. They have also been condensed, by omitting the countries from which small amounts only have been imported.

COTTONS.	England.	Scotland.	France.	All other Countries.	Total.
	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Printed or Coloured	3,553,509	259,038	355,227	188,901	4,356,675
White	1,868,723	65,862	178,784	374,535	2,487,904
Hosiery, Gloves, Mitts Bindings, &c.	201,783	4	4,001	181,666	387,454
Twist, Yarn, and Thread	141,212	26,899	693	3,981	172,785
Nankeens	23,658		2,078	202,497	228,233
All other Manufactures	96,572	2,786	79,204	50,813	229,375
Total from each country	5,885,457	354,589	619,987	1,002,393	7,862,326

The following statement of the manufacture of cotton in the United States, which has lately been published, seems sufficiently authentic. The state of the cotton manufactures in the United States, in 1831, as collected by the Committee of the New York convention, shows, that there were in twelve states of the union, 795 cotton mills, with a capital of \$40,714,984, manufacturing annually 77,751,316 lbs. of cotton, or 214,882 bales of 361,86,100 lbs.

Number of spindles	1,246,903
Number of looms	33,506
Pounds of yarn sold	10,642,000
Yards of cloth made	230,461,900
Pounds of cloth	59,604,925
Males employed	18,593
Females employed	38,927
Pounds of starch used	1,641,253

Barrels of flour for sizing,	17,245
Cords of wood burnt	46,519
Tons of coal burnt	24,420
Bushels of charcoal burnt	9,205
Value of other articles consumed not enumerated	599,223
Spindles then building	172,924
Gallons of oil consumed	300,338
Hand weavers	4,760
Total dependents	117,626
Annual value of cotton manufactures	26,000,000
Aggregate or total annual amount of wages paid	10,294,944

Of articles manufactured from wool, it will be perceived that France furnishes a considerable quantity, although bearing a very small proportion to that of England. The importations from France consist chiefly of stuffs, and other light articles, in which their manufacturers excel those of England, and also some sorts of blankets.

WOOLLENS.	England.	Scotland.	Ireland.	France.	All other Countries.	Total.
	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
Not exceeding 50 cts. per square yard	418,324	3,604	8	25,098	5,709	452,743
Exceeding 50 cts. and not exceeding 100 cts. per square yard	958,458	453	12	98,695	26,197	1,083,815
Exceeding 100 cts. and not exceeding 250 cts. per square yard	1,137,370	1,726	6	68,166	28,792	1,236,060
Exceeding 250 cts. and not exceeding 400 cts. per square yard	69,984	486	—	3,439	1,797	75,706
Exceeding 400 cts. per square yard	5,890	—	—	—	125	6,015
Blankets	551,149	10	124	42,588	173	594,044
Hosiery, Gloves, Mits, &c.	124,116	91	3,794	1,040	4,412	133,453
Bombazines	22,906	—	—	10,927	54	33,887
Worsted Stuff Goods	1,228,707	838	40	102,234	65,726	1,397,545
All other Manufactures	157,869	6,155	—	132,379	22,903	319,306
Not exceeding 33½ cts. per square yard	263,283	2,307	—	170	900	266,060
Total from each country	4,938,056	15,670	3,984	484,736	156,188	5,598,634

About six tenths of the silk used in the United States is imported from France, nearly two tenths from China, rather more than one tenth from England and the British East Indies, and the remainder chiefly from Italy. It will be apparent in this arti-

cle, as in many others, that the inhabitants of the union have an advantage over the nations of Europe, in the opportunity of importing their manufactures from those countries which severally bring them to the highest perfection.*

SILKS.	England, &c.	British East Indies.	France.	China.	Italy.	All other Countries.	Total.
	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
From France	29,358	376,166	2,922	942,923	—	15,723	1,367,092
From India	—	—	—	28,756	—	2,468	31,224
From China	249,860	—	2,256,529	—	265,892	52,637	2,824,918
From Italy	119,701	—	1,291,849	—	89,545	49,681	1,550,776
Total from each country	398,919	376,166	3,551,300	971,679	355,437	120,509	5,774,010

The importations of the manufacture of flax are from the northern nations of Europe; more than six tenths from England, Scotland, and Ireland, two tenths

from the Hanse Towns, one tenth from France, one twentieth from Russia, and the remainder chiefly from the Netherlands, or through the medium of Cuba.

MANUFACTURES OF FLAX.	England.	Scotland.	Ireland.	Hanse Towns.	France.	Russia.	All other Countries.	Total.
	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
Linen	1,088,554	156,495	288,524	496,907	282,372	93,019	79,182	2,485,053
Checks and Stripes	23,028	2,750	—	16,923	—	—	24	42,725
Other Manufactures	170,295	185,481	606	20,855	9,137	88,350	8,778	483,502
Total from each country	1,281,877	344,726	289,130	534,685	291,509	181,369	87,984	3,011,280

Of the articles made from hemp, Scotland furnishes nearly half, Russia a quarter, England an eighth, and

the remaining eighth comes chiefly from the Hanse Towns.

MANUFACTURES OF HEMP.	England.	Scotland.	Ireland.	Russia.	Hanse Towns.	All other Countries.	Total.
	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
Ticklenburghs, &c.	79,846	400,070	4,046	—	79,663	40	563,665
Sheeting	9,138	—	—	241,098	—	1	250,237
Other Manufactures	28,642	95,635	—	3,225	5,517	84	133,103
Total from each country	117,626	495,705	4,046	244,323	85,180	125	947,005

Carpeting was imported during the year to the amount of 200,451 dollars, exclusively from Great

Britain or her colonies; sail duck, to the amount of 317,347 dollars, of which 259,896 were from Russia,

* It will perhaps raise the character of the inhabitants of the United States in the opinion of some of our fashionable coteries, if they are informed that French silks and Canton crapes are pro-

fusely worn in that country, even by the moderately gay; and that female dress is sometimes as splendid, and sometimes as ridiculous in New York as in London.

28,485 from the Netherlands, 18,483 from England and Scotland, and 9,567 from the Hanse Towns; cotton bagging, to the amount of 69,126 dollars, of which 52,918 were from Scotland, 5,852 from England, and 10,345 from the Hanse Towns.

Travellers in the United States have expressed

themselves surprised at the variety of foreign wines produced at the tables of the more wealthy inhabitants: when the various kinds included under the different heads of the following table are considered, the amateur in this luxury is left without a wish ungratified, except that of actual participation.

WINES.	England.	British E. Indies.	Portugal.	Gibraltar.	France.	Spain.	Italy and Malta.	All other Countries.	Total value.
	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Madeira	20,631	50,239	10,579	40	137	—	—	248,797	330,423
Sherry	29,263	100	—	1,276	—	38,124	3	781	69,547
Red of France and Spain	1	—	—	1,310	245,549	20,517	1,244	4,412	273,033
Of France, Spain, Germany, and Mediterranean, not enumerated	404	—	—	27,097	202,029	166,882	5,744	22,148	424,304
Of Sicily and all others not enumerated	15,203	355	84,321	3,309	187,443	5,231	44,685	97,248	437,795
Total from each country	65,502	50,694	94,900	33,032	635,158	230,754	51,676	373,386	1,535,102

However delicious the wines, the desert would be incomplete without the fruits of various climates: but when, in addition to the melons, apples, peaches, pine-apples, oranges, and a hundred other fruits which are the domestic produce of different sections of the

union, are added all the varieties of foreign fruits, epicures, either of the city or west-end species, might partake of an American desert without one serious regret, except, perhaps, that its flavour was destroyed by the *day-light*.

FRUITS.	England.	Gibraltar.	France.	Spain.	Cuba.	Italy and Malta.	Adriatic Ports.	Turkey, Levant, & Egypt.
	<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>
Almonds	—	65,757	836,526	165,213	27,140	64,006	—	—
Currants	392,839	—	—	407	—	23,962	153,731	156,590
Prunes and Plums	—	21	70,139	14,576	2,139	—	—	—
Figs	41,238	1,169	313	111,151	39,991	1,669	—	1,423,759
Raisins	54,981	429,385	28,838	4,892,819	72,403	—	11,299	741,017
Total from each country	489,058	496,332	935,816	5,184,166	141,673	89,637	165,030	2,321,366

By the quantity of spirits distilled in America, and the duty imposed on those coming from abroad, the quantity imported is reduced to a comparatively small amount. Of spirits manufactured from grain, the amount imported is 205,704 dollars, of which, 183,551 dollars are from the Netherlands: of those distilled from other materials, the total amount is 453,286 dollars, of which, 199,945 dollars are from the Danish West Indies, and 200,899 from France. The amount of molasses imported is 995,776 dollars, of which, 665,238 dollars are from Cuba; 66,097 dollars from other Spanish West Indies; 154,833 dollars from the French West Indies; 72,549 dollars from the Dutch West Indies; while from the British West Indies, in consequence of the commercial regulations existing, the amount is only 1,239 dollars. Of beer, ale, and porter, the quantity is only 65,260, and the value 60,420 dollars: almost the whole comes

from England and Scotland. If the price of English porter is 4s. 6d. per gallon, (more than five times the price of French wines,) the diminutive amount of the quantity imported can not be matter of surprise.

The amount of tea consumed in the United States is very considerable, and, with exceptions scarcely worth mentioning, is imported direct from China. Of Bohea, 152,990 lbs. only are imported; but of Souchong, and other black, 2,166,142 lbs.; of Hyson and other green, 5,637,247 lbs., and 653,036 lbs. Imperial; the whole value being 2,425,018 dollars. Considerable as is the import of tea, that of coffee is nearly double in value, and six times the amount in weight, being 51,488,248 lbs., worth 4,227,021 dollars. Nearly sixteen millions of pounds are imported from Cuba, fourteen millions and a half from Brazil, and more than eleven millions from Hayti,* while

* We request the advocates of West India slavery to reconcile this authentic statement with their assertion, that since the blacks of Hayti had enfranchised themselves, they had ceased the culti-

vation of this plant, or at least, did not carry it beyond their own immediate necessities.

the amount from the British West India islands is only 57,632 lbs.

The next article we have to notice is of a character very different from the preceding, though not inferior to any in utility,—it is iron. In the variety of articles manufactured from it, this material is pre-eminent; and it will be seen that, almost without exception, the manufactured articles imported, from the needle to the sledge hammer, are from Great Britain; while, on the other hand, the chief importation of bar and bolt iron is from Sweden and Russia. No table more manifests the superiority of British skill, industry, and capital, over that of her competitors, than that respecting iron; and we apprehend

this is almost the last point which will yield to foreign competition. The lighter manufactures of Great Britain may the sooner be superseded in the American market, because on these females labour, and from the decided aversion of the youth of that sex to domestic service, their labour may be brought to bear at a rate very little exceeding the pittance now paid to the English weaver; while, notwithstanding a protecting duty varying from twenty-five to one hundred per cent. on iron, it may be found impossible to exclude the foreign article on account of the high price in the United States of such labour as can only be performed by men.

IRON.	England, &c.	British Colonies.	Russia.	Sweden.	All other Countries.	Total.
<i>Subject to ad valorem duties.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Side-arms and Fire-arms, other than Muskets and Rifles	98,248	12	—	—	80,893	179,153
Drawing-knives, Axes, Adzes, and Socket-chisels	28,998	9	—	—	—	29,007
Bridle-bits	62,253	—	—	—	18	62,271
Steelyards, Scalebeams, and Vices	30,899	—	—	—	—	30,899
Cutting Knives, Siches, Spades, &c.	85,821	4	—	—	9,179	95,004
Screws	66,832	—	—	—	3	66,835
Other Articles	2,791,487	714	—	—	116,777	2,908,978
<i>Subject to specific duties.</i>						
Muskets	10,824	38	—	300	13,980	25,142
Rifles	58	27	—	—	—	85
Iron and Steel Wire	59,326	54	—	—	105	59,485
Tacks, Brads, Nails, and Spikes	44,570	240	—	—	255	45,065
Chains and Cables	24,181	606	—	—	1,098	25,885
Mill Irons and Saws	12,252	200	—	—	—	12,452
Anchors	473	128	—	—	520	1,121
Anvils and Blacksmiths' Hammers	34,291	52	—	—	2	34,345
Castings, &c.	33,304	1,144	—	—	4,238	38,686
Rods	6,348	71	—	240	79	6,729
Sheets and Hoop	55,270	2,061	2,482	—	19	59,822
In Pigs	25,643	1	—	—	27,000	52,644
Bars and Bolts	243,802	1,767	541,445	1,148,604	21,093	1,956,711
Steel	233,200	97	—	6,499	52,161	291,957
Total from each country	3,948,080	7,225	543,927	1,155,643	327,342	5,982,307

Owing to the heavy duty, the amount of paper imported into the United States is very limited, being only 110,408 dollars; of this amount, 36,023 dollars are from France; 36,654 dollars from Cuba; 16,208 dollars from England; and 10,168 dollars from Italy. It will be perceived that the articles are con-

fined to letter paper, or mere fancy papers, there being no amount worth mentioning of printing or plate paper. We do not know that this duty has any unfavourable influence on the progress of knowledge, as paper is manufactured nearly as well, and quite as cheap, in the United States as in other countries.

PAPER.	England.	France.	Italy.	Cuba.
	<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>
Folio and 4to Post	6,682	24,746	14,669	—
Foolscap, Drawing, and Writing	6,160	195,660	79,757	189,136
Printing, Copper-plate, and Stainers	5	32	—	902
Binders and Wrappers	1,005	11,831	—	—
All Other	20,113	11,038	766	2,507
Value in Dollars	16,208	36,023	10,168	36,654

It is with regret we perceive that the importation of books is so comparatively trivial—certainly the amount not at all corresponding with the mental demands of a prosperous republic, containing thirteen millions of inhabitants. The total amount from all foreign countries is only 130,632 dollars, of which, 81,752 are from England, 34,262 from France, 7,075 from the Hanse Towns, 2,346 from the Netherlands, and 1,897 from Italy. We have already expressed our regrets and our hopes on the subject of the pro-

tecting duty which thus limits the importation of knowledge, and will only, therefore, repeat our firm expectation, that the impolicy of an impost so contrary to the peculiar characteristic of an age in which, by “running to and fro,” “knowledge is increased,” will speedily be discovered by the very class for whose sake it has been enacted, and who, were they less enlightened, might deem it a benefit to themselves, to be nothing less than a national injury.

BOOKS.		England.	France.	Italy.	Hanse Towns.	Cuba.	Netherlands.
Volumes In Pounds	{ Printed previous to 1775	785	—	—	—	—	—
	{ In other Languages, except English, Latin, and Greek	2,178	67,433	1,999	9,348	1,790	4,198
	{ Latin or Greek	2,712	1,636	74	3,407	—	42
	{ All others (English)	79,478	2,191	58	122	54	—
Value in Dollars		81,752	34,262	1,897	7,075	474	2,346

Glass still continues to form an article of import, though to a very diminished amount. It is chiefly imported from Great Britain, France, and the Hanse Towns.

The Scotch proverb, that “many mickles make a muckle,” has no better exemplification than in the import of cigars into the United States, which amounts to 251,818 dollars, of which 243,526 are from Cuba. Thus nearly double the amount of dollars is spent in smoke by the Americans, of that bestowed on works of English and other foreign literature. Surely it would be better to *protect* cigars, and leave knowledge free.

It only remains for us to notice a few articles of raw material, which are imported into the United States. Hemp, to the amount of 200,338 dollars, almost exclusively from Russia; flax, 39,055, of which 29,101 are from Russia, 8,604 from Prussia, and the remainder from the Netherlands; wool, to the amount of 96,853 dollars, of which 39,846 were from England, 20,329 from Turkey, the Levant, and Egypt, 13,932 from Spain, 8,594 from Portugal, 6,252 from the Hanse Towns, and the remainder from the British colonies and South America. Only a few years since, the American wools were an article of export to Great Britain; but a duty being placed on the importation of inferior wools, for the protection of the British farmer, (or, perhaps, more truly—and it is well to accustom ourselves to write the truth on all occasions—for the benefit of the British landholder,) the Americans were forced to commence, though, at first, in the very rudest shape, the manufacture of woollens; and from this commencement the manufacture of that article has advanced, till it not only consumes all the

American wool, but requires a large amount of import. The amount of this article imported for the year 1831, (of which the official accounts are not yet published,) has, we find, far exceeded that of any former year.

Notwithstanding the abundance of salt and coal in America, they are both, to some extent, articles of import; of the former, upwards of five millions of bushels (value 671,979 dollars) have been imported, chiefly from Great Britain or her colonies; and of the latter, 1,640,295 bushels, (value 204,773 dollars,) almost entirely from Great Britain and her dependencies.

The total amount of the imports for the year 1830 (70,876,920 dollars) exceeds that of the exports (63,849,508) by 7,027,412 dollars, or about ten per cent. There should, of course, be an excess of value of imports according to those returns, whether their value is estimated at the cost in foreign ports, or at the market-price in the American ports; for these goods are the returns for the exports, the value of which is estimated at the rate of the markets in the United States; and, unless a greater value of merchandise can be obtained in exchange in the foreign ports, the ship-owners would obtain nothing for outward freight: and still more ought the value of the imports in the American markets, after deducting duties, to exceed that of the exports, since this excess is the only fund for paying the two freights and interest on the capital employed. It can scarcely be doubted, that the estimated amount of the imports must be much under the real value; for the difference of ten per cent. between the imports and exports would be utterly inadequate to remunerate

the ship-owner and the merchant, especially as more than sixty-six millions of the imports are in American vessels, and less than five millions in the ships of other nations. With the world at large, therefore, there is no balance of trade against the United States, the real excess of imports being, in fact, only the profit of the parties who devote their capital, time, and skill, to commerce. With separate countries, however, the balance is, in some cases, generally against, and in others almost as uniformly in favour of the United States. With Great Britain, at the present time, the balance is considerably against the United States, and the rate of exchange is consequently ten per cent. in favour of Great Britain, which operates, to a considerable extent, as an additional duty on the imports of the latter country, as for every hundred pounds the American merchant has to remit, he can only procure bills on England at a premium of ten pounds.

The navigation of the United States, although so intimately connected with commerce, requires to be noticed separately. It is certainly a most important interest, not only as associated with the employment of a numerous class of individuals, and a large amount of capital, but from considerations of a national and political character. It is only through their naval power, as combined with their commercial importance, that the United States can cause themselves to be respected by European nations; and it is manifest, that the adequate supply of hardy and well-disciplined mariners, in case of war, must most materially depend on the state of the commercial marine in times of peace. To foster and protect the naval interest was, therefore, naturally one of the earliest measures of the general government of the United States, after their independence had been established. While, as a necessary addition to the revenue, a duty of six cents per ton only was imposed on vessels of the United States, when entering any of her harbours from any foreign port, on all vessels belonging to foreign nations, there was laid a duty at the rate of fifty cents per ton, with an addition of ten per cent. to the several rates of duty on merchandise brought into the United States, when not imported in ships or vessels thereof. The beneficial operation of this system, from the confidence it inspired in the estimation in which the government held the navigation of the country, from the protection afforded by it to an interest destined to be the great source of its revenue, and from its various relations to the industry, the commerce, the fiscal concerns, and the external defence of the republic, was soon made manifest by the resuscitation and rapid

increase of the navigation of the United States, which immediately ensued from the adoption of it, and which were, doubtless, produced in a good degree by these measures of protection, aided however by other causes, which soon after followed and co-operated with them. The discriminating duty was applauded by the merchants of the United States, and by all those classes more immediately connected with its navigation; in addition to its effects on individual interests, and its countervailing influence on the duties imposed on American shipping in foreign ports, it required indeed little prescience to perceive, that, with an extended sea-coast of near two thousand miles, bordering a vast and fertile country, inhabited by an intelligent, brave, and enterprising people, the ocean was destined, at no distant period, to become one of the great sources, alike of their wealth and their industry—of their prosperity and their glory. The discrimination thus instituted between foreign vessels and those of the United States, with occasional alterations, dependent on the circumstances of the times, and the varying dispositions and conduct of other nations towards the republic, with a duty on foreign vessels of fifty cents per ton, as light-money, in 1804, have been continued to the present time, except with those powers with whom conventions or arrangements have been made for a reciprocal abolition, or suspension of them, in whole or in part.

That the increase of the navigation of the United States before alluded to, was as rapid and gratifying as it was unexpected and unexampled, is established by the fact, that the tonnage of the United States, which, in 1789, amounted to 204,998 tons, of which 127,329 were employed in the foreign, 68,607 in the coasting trade, and 9,062 in the fisheries, had reached, in 1807, to 1,477,075 tons, giving, in that space of time, a sevenfold increase, whereof 1,116,241 were employed in foreign trade, 285,090 in the domestic trade of the country, and 75,744 in the fisheries. This very important expansion of the navigation of the United States, as before observed, emanated in part from the discriminating duties; while the unprecedented political circumstances of the times, could not but also have a powerful influence in producing a result so desirable.

The French revolution, which commenced nearly contemporaneously with the adoption of the federal constitution, deranged for a series of years the mercantile operations of nearly all the navigating nations of Europe; and for long periods between the epochs of 1789 and 1807, left the United States as the only important neutral power traversing the ocean. Under these circumstances, the increase and employ-

ment of the shipping of the United States was favoured in a manner which could not, within the same compass of time, have been effected by any other causes; as the hazards of capture and the higher rates of insurance which attached to European vessels at that period in intercourse with the United States, greatly exceeded the influence of the discriminating duties, and served almost to extinguish, at least for a time, the freighting business of this country, and of other nations, in the vessels of the belligerents. But, in 1807, it became apparent, that, amid the collisions of a world in arms, this state of unrivalled prosperity for the commerce and navigation of the United States, was not to have a longer continuance; for aggressions on their rights as a neutral nation, and depredations on the commerce of the United States by the more important of the maritime powers of Europe, multiplied so fast as to occasion the withdrawal, for a time, of American navigation from the ocean, and to give rise to those measures of resistance which issued in a war with Great Britain. At the conclusion of the war, it was the desire of the government of the United States to promote freedom of commerce among the nations of the earth upon a fair and equal footing, as conducive, by the friendly intercourse and interchange of commodities to which it would give rise, to their mutual advantage; they also felt confident that the vigour and maturity which the navigation of the republic had attained, would enable it successfully to meet a competition with that of other powers upon principles of reciprocity: the act of congress of March, 1815, repealing the discriminating duties on foreign vessels and vessels of the United States, and on goods imported therein, was therefore passed, abolishing the distinction and duties which previously existed, so far as regarded the vessels of those powers which reciprocated the same conditions to the United States. This act was confirmed by an act, passed January 7, 1824, extending the principle so far as to include within it those articles of produce and manufacture which could only be, or most usually are, first shipped from a port or place in Europe, when brought into the United States in the vessels of such nation, whether the articles be of its own produce or manufacture or not: the proffer of which conditions has been accepted by several of the powers of Europe.

Both the facts and the sentiments which we have just stated are, in substance and partly in words, those of the report of the committee made to the senate in the year 1826.* We are aware that the position has

been strenuously maintained, that American navigation has been materially depressed by the enactment of the tariffs of 1824 and 1828. Mr. Cambreleng, chairman of the committee of commerce appointed by the house of representatives, in 1830, in a very long and very able report, takes this view of the subject;† but it appears to us, that, owing to circumstances which no longer exist, the commercial navy of the United States has engrossed more than its due proportion of foreign trade; of which, having so ample a field of employment both for labour and capital, they should be the less tenacious, especially as the amount of tonnage employed in the coasting trade and the whale fishery is decidedly on the increase. It would, however, certainly be desirable, that every diminution of the expense of fitting out vessels which can accrue from the reduction of duties on tonnage, &c. should be effected.

The tonnage of the registered vessels employed in foreign trade at the close of the year 1829, was 650,142 tons; enrolled and licensed vessels, including licensed craft under twenty tons, employed in the coasting trade, 508,858 tons; vessels employed in the whale fishery, 101,796 tons; making a total of 1,260,797 tons. Of the registered tonnage, 57,284 tons were employed in the whale fishery; and of the tonnage reckoned as employed in the coasting trade, 54,036 tons were employed in steam navigation; a larger amount, we apprehend, than the tonnage of steam vessels in the aggregate of all other nations.

The tables annexed to this chapter have already been frequently referred to.—Table I. contains a statement of the value of the domestic exports of the United States, from 1821 to 1830, inclusive; and so far as exports may be regarded as a test, exhibits the progress of the fisheries, the agriculture, and the manufactures of the republic, during that period. Table II. is a statement of the total value of exports, domestic and foreign, from 1790 to 1831; and though but a brief compendium, affords important matter for the economist and the politician: the figures opposite the years 1814 and 1825 stand as memorials of the evils of war and of excessive speculation. Table III. contains a statement both of the value and the destination of the exports, domestic and foreign, during the last ten years. The stream of American commerce, and the relative importance of each country to her markets, are here exhibited. It is gratifying to perceive, that more than one third of the exports of the United States are consumed by Great Britain.

* Nineteenth Congress, First Session, Rep. No. 16.

† Nineteenth Congress, First Session, Rep. No. 165.

Table IV. is a statement of the kind and value of articles imported into the United States during the year 1830, and will enable manufacturers or merchants to ascertain, with the minutest accuracy, the value of every class of articles imported into the United States. Table V. exhibits, combined in one view, the value of the imports and exports from each foreign country during the year 1830; and affords an opportunity of ascertaining the relative proportion of the imports and exports in each case. The large amount of commerce with the island of Cuba will not fail to attract observation. This table also contains the amount of the tonnage of American and foreign vessels engaged in conducting the commerce of the United States into the several nations of the world. It will be perceived, that in their transactions with Great Britain, about three fourths of American and one fourth of British, are employed; while, in the aggregate, the Americans continue to engross nearly seven eighths of the tonnage employed in their commerce.

COMMERCE.—TABLE I.

A SUMMARY STATEMENT OF THE VALUE OF EXPORTS, OF THE GROWTH, PRODUCE, AND MANUFACTURE OF THE UNITED STATES, FROM 1821 TO 1825, ENDING THE 30TH OF SEPTEMBER IN EACH YEAR.

	1821.	1822.	1823.	1824.	1825.
THE SEA.	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Dried fish, or cod fisheries . . .	708,778	666,730	734,024	873,686	830,356
Pickled fish	264,813	249,108	270,776	263,019	248,417
Whale (common) oil and bone	350,480	311,415	432,115	168,272	296,425
Spermaceti oil and candles . . .	175,117	167,286	221,309	306,014	219,867
	1,499,188	1,384,539	1,658,224	1,610,990	1,595,065
THE FOREST.					
Skins and furs	766,205	501,302	672,917	661,455	524,692
Ginseng	171,786	313,943	150,976	229,080	144,599
Product of wood—					
lumber, (boards, staves, shin-					
gles, hewn timber, &c.) . . .	1,512,808	1,307,670	1,335,600	1,734,586	1,717,571
oak bark and other dye . . .	139,534	145,707	111,333	95,674	93,809
naval stores, (tar, pitch, rosin,					
& turpentine)	314,660	447,869	457,562	555,055	463,897
ashes, pot and pearl	889,343	1,099,053	1,770,523	1,613,796	1,994,381
	3,794,341	3,815,542	4,498,911	4,889,546	4,938,949
AGRICULTURE.					
Product of animals—					
beef, tallow, hides, live cattle	698,323	844,534	739,461	707,299	930,465
butter and cheese	190,287	221,041	192,778	204,205	247,787
pork, (pickled,) bacon, lard,					
live hogs	1,354,116	1,357,899	1,291,322	1,489,051	1,832,679
horses and mules	59,830	93,753	123,373	213,396	283,835
sheep	22,175	12,276	15,029	14,938	20,027
Vegetable food—					
wheat, flour, and biscuit . . .	4,476,357	5,287,286	5,151,437	5,977,255	4,466,679
Indian corn and meal	606,279	900,656	930,489	736,340	878,073
rye meal					73,245
rice	1,494,307	1,553,482	1,820,985	1,882,982	1,925,245
all other, (pulse, rye, oats,					
potatoes, apples)	173,543	233,825	248,981	271,907	183,476
Tobacco	5,648,962	6,222,838	6,282,672	4,855,566	6,115,623
Cotton	20,157,484	24,035,058	20,445,520	21,947,401	26,846,649
All other agricultural products—					
indigo	420,202	392,772	2,314	836	7,084
flax-seed	1,975	805	262,314	504,327	324,845
maple, or brown sugar	18,498	23,025	27,124	434	2,632
hops	85,664	93,129	112,574	81,810	13,865
wax				107,451	85,592
	35,407,992	41,272,379	37,646,726	38,995,198	54,227,751
MANUFACTURES.					
Soap, and tallow candles	661,409	788,946	664,807	816,095	790,975
Leather, boots, shoes, saddlery,					
&c.	304,430	385,086	566,489	814,638	724,281
Hats	63,363	86,007	115,168	217,648	240,074
Grain, (spirits, beer, and starch,) .	120,581	124,140	89,615	154,144	154,223
Wood, including coaches and					
other carriages	369,511	487,141	421,633	513,435	470,006
Cordage and canvass	26,662	33,807	22,659	47,262	28,114
Iron	108,083	132,727	97,271	142,974	156,173
Spirits, from molasses	280,648	60,045	37,807	51,172	51,505
Sugar, refined	24,051	26,320		7,195	6,963
Chocolate	2,166	3,391	9,249	2,285	1,184
Gunpowder	56,919	82,947	66,326	163,165	234,366
Brass and copper	26,694	36,974	16,768	26,981	30,472
Medicinal drugs	44,998	43,711	74,490	78,675	69,460
Various items, (snuff, wax, lead,					
cotton goods, gold and sil-					
ver coin, umbrellas, books,					
maps, &c.)	173,127	191,810	175,245	228,752	210,619
Uncertain—manufactured	492,009	637,978	782,071	1,576,962	2,560,682
raw produce	215,742	280,589	211,949	312,283	443,183
	707,751	918,567	994,020	1,889,245	3,003,865
TOTAL	43,671,894	44,897,097	47,155,408	50,649,500	66,944,745

COMMERCE.—TABLE I.—CONTINUED.

	1826.	1827.	1828.	1829.	1830.
THE SEA.	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Dried fish, or cod fisheries . .	667,742	747,171	819,926	747,541	530,690
Pickled fish	257,180	240,276	246,737	220,527	225,987
Whale (common) oil and bone	236,845	223,604	181,270	495,163	680,683
Spermaceti oil and candles . .	311,621	264,281	446,047	353,869	287,910
	1,473,388	1,575,332	1,693,980	1,817,100	1,725,270
THE FOREST.					
Skins and furs	592,473	441,690	626,235	526,507	641,790
Ginseng	137,014	79,566	91,164	114,396	67,852
Product of wood—					
lumber, (boards, staves, shingles, hewn timber, masts, &c.)	2,011,694	1,697,170	1,821,906	1,680,403	1,663,242
oak bark and other dye	65,120	79,894	101,175	165,406	220,275
naval stores, (tar, pitch, rosin, and turpentine)	254,491	402,489	487,761	377,613	321,019
ashes, pot and pearl	990,458	643,171	761,370	817,434	1,105,127
	3,951,260	3,343,970	3,889,611	3,681,759	4,019,275
AGRICULTURE.					
Product of animals—					
beef, tallow, hides, and live cattle	733,430	772,636	719,961	674,955	717,693
butter and cheese	207,765	184,049	176,354	176,205	142,370
pork, (pickled,) bacon, lard, live hogs	1,892,429	1,555,698	1,495,830	1,493,629	1,315,245
horses and mules	247,543	173,629	185,542	207,868	182,244
sheep	17,693	13,586	7,499	10,644	22,110
Vegetable food—					
wheat, flour, and biscuit . . .	4,411,870	4,645,784	4,464,774	5,972,920	6,320,603
Indian corn and meal	1,007,321	1,022,464	822,858	974,535	597,119
rye meal	49,297	47,698	59,036	127,004	67,796
rye, oats, and other small grain and pulse	72,371	87,284	67,997	74,896	66,249
potatoes	41,583	39,174	35,371	30,079	39,027
apples	27,370	35,828	22,700	15,958	23,727
rice	1,917,445	2,343,908	2,620,696	2,514,370	1,986,824
Tobacco	5,347,208	6,577,123	5,269,960	4,982,974	5,586,365
Cotton	25,025,214	29,369,545	22,487,229	26,576,311	29,674,883
All other agricultural products—					
indigo	3,922	8,358	1,495	.....	827
flax-seed	144,908	188,606	144,095	113,040	180,973
hops	100,668	8,284	25,432	6,917	30,312
maple, or brown sugar	4,964	1,489	4,095	3,289	2,975
	41,253,001	47,065,143	38,610,924	43,954,584	26,977,332
MANUFACTURES.					
Soap, and tallow candles . . .	722,417	901,751	912,322	692,691	619,238
Leather, boots, and shoes . . .	586,576	388,525	401,259	356,653	338,603
Saddlery	66,994	57,717	49,758	35,765	36,651
Hats	272,431	286,624	326,294	270,780	309,362
Wax	206,001	123,354	134,886	132,939	163,666
Spirits from grain, beer, ale, and porter	143,966	144,832	203,780	215,494	225,357
Wood, including carriages, furniture &c.	631,060	574,751	611,196	501,946	463,425
Snuff and Tobacco	210,134	239,024	210,747	202,396	246,747
Lead	3,347	3,761	4,184	8,417	4,831
Linseed oil and spirits of turpentine	27,116	20,704	22,119	20,442	35,039
Cordage and canvass	31,482	63,074	20,030	7,984	4,135
Iron, pigs, bar, nails, &c. . . .	248,960	273,163	231,234	223,705	309,473
Spirits from molasses	70,212	97,003	185,096	166,740	49,798
Sugar, refined	27,043	34,012	38,207	50,739	193,084
Chocolate	2,427	1,350	3,344	1,759	893
Gunpowder	174,273	176,229	181,384	171,924	128,625
Brass and copper	60,083	62,341	60,452	129,647	36,601
Medicinal drugs	133,716	119,390	95,083	101,624	92,154
Cotton piece goods—					
printed and coloured		45,120	76,012	145,024	61,800
white		951,001	887,623	981,370	964,196
nankeens		14,750	5,149	1,878	1,093
twist, yarn and thread		11,175	12,570	3,849	24,744
all other manufactures of } 1,138,125		137,368	28,873	127,336	266,360
Flax and hemp—					
cloth and thread		11,084	5,335	2,166	2,152
bags, and all manufactures of } 8,381		5,364	2,365	14,954	1,779

COMMERCE.—TABLE I.—CONTINUED.

	1826.	1827.	1828.	1829.	1830.
MANUFACTURES—CONTINUED.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
Wearing apparel	85,866	94,768	143,253	91,108	102,277
Combs and buttons	23,654	33,415	60,957	76,250	124,599
Brushes	4,631	7,334	6,372	3,150	6,116
Billiard tables and apparatus	3,811	3,191	2,240	3,443	316
Umbrellas and parasols	50,764	49,138	24,703	22,067	25,796
Leather and morocco skins, not sold per lb.	43,834	119,545	81,221	80,173	70,968
Fire engines and apparatus	4,935	2,513	2,384	2,332	2,332
Printing presses and type	33,509	33,713	40,199	12,908	13,274
Musical instruments	5,157	14,944	10,011	8,868	10,261
Books and maps	49,340	54,012	46,937	29,010	32,004
Paper and other stationery	39,582	37,716	32,026	25,629	40,994
Paints and varnish	21,545	29,664	26,229	21,133	13,716
Vinegar	5,801	8,182	5,894	5,953	6,690
Earthen and stone ware	1,953	6,492	5,595	5,592	2,773
Manufactures of glass	44,557	59,307	51,452	49,900	60,280
—tin	4,515	2,967	5,049	1,757	4,497
—pewter and lead	1,820	6,183	5,545	5,185	4,172
—marble and stone	13,303	3,505	3,122	2,647	4,655
—gold & silver, & gold leaf	2,297	3,605	7,505	11,250	3,561
Gold and silver coin	605,855	1,043,574	693,037	612,886	937,151
Artificial flowers and jewellery	25,162	22,357	18,195	21,627	13,707
Molasses	621	1,511	601	1,992	3,968
Trunks	9,397	12,483	6,004	11,248	6,654
Bricks and lime	6,075	3,365	4,673	3,717	2,482
Salt . . . . .	.....	.....	.....	27,648	22,978
Uncertain—manufactured	248,252	293,379	247,990	309,106	347,228
raw produce	277,086	257,921	233,763	221,544	309,249
	582,338	550,400	481,753	530,650	656,477
TOTAL	53,055,710	58,921,691	50,669,669	55,700,193	59,462,029

COMMERCE.—TABLE II.

A SUMMARY STATEMENT OF THE TOTAL VALUE OF EXPORTS, DOMESTIC AND FOREIGN, FROM 1790 TO 1831.

For the Year ending Sept. 30.	Domestic Produce.	Foreign Produce.	Total.	For the Year ending Sept. 30.	Domestic Produce.	Foreign Produce.	Total.
1790	*12,123,094	†8,082,062	20,205,156	1811	45,294,643	16,022,790	61,316,833
1791	*11,407,225	†7,604,816	19,012,041	1812	30,032,109	8,495,127	38,527,236
1792	*12,451,860	†8,301,238	20,753,098	1813	25,008,152	2,847,845	27,855,997
1793	*15,665,744	†10,443,828	26,109,572	1814	6,782,272	145,169	6,927,441
1794	*19,815,741	†13,210,492	33,026,233	1815	45,974,403	6,563,350	52,537,753
1795	*28,793,694	†19,195,788	47,989,472	1816	64,781,896	17,138,556	81,920,452
1796	40,764,097	26,300,000	67,064,097	1817	68,313,509	19,358,069	87,671,569
1797	29,850,206	27,000,000	56,850,206	1818	73,854,437	19,426,696	93,281,133
1798	28,527,087	33,000,000	61,527,087	1819	50,976,938	19,165,683	70,142,521
1799	33,142,522	45,523,000	78,665,522	1820	51,683,640	18,008,029	69,691,669
1800	31,840,903	39,130,877	70,971,780	1821	43,671,894	21,302,488	64,974,382
1801	47,473,204	46,642,721	94,115,925	1822	49,874,079	22,286,202	72,160,281
1802	36,708,189	35,774,971	72,483,160	1823	47,155,408	27,543,622	74,699,030
1803	42,205,961	13,594,072	55,800,033	1824	50,649,500	25,337,157	75,986,657
1804	41,467,477	36,231,597	77,699,074	1825	66,944,745	32,590,643	99,535,388
1805	42,387,002	53,179,019	95,566,021	1826	53,055,710	24,539,612	77,595,322
1806	41,253,727	60,283,236	101,536,963	1827	53,921,691	23,403,136	82,324,827
1807	48,699,592	59,643,558	108,343,150	1828	50,669,669	21,595,017	72,264,686
1808	9,433,546	†2,997,414	22,430,960	1829	55,700,193	16,658,478	72,358,671
1809	31,405,702	20,797,531	52,203,233	1830	59,462,029	14,387,479	73,849,508
1810	42,366,675	24,391,295	66,757,970	1831	62,048,233	18,324,383	80,372,566

* Estimated at three fifths of the whole.

† Estimated at two fifths of the whole.

COMMERCE.—TABLE III.

DESTINATION AND VALUE OF EXPORTS, DOMESTIC AND FOREIGN, FROM 1821 TO 1830.

WHITHER EXPORTED.	1821.		1822.		1823.		1824.		1825.	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.
	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
Russia	127,939	500,955	177,261	351,820	51,635	597,099	92,766	139,215	55,191	232,210
Prussia					7,268	668	5,163		4,918	12,650
Sweden*	154,213	62,968	180,411	30,210	151,037	147,191	163,725	161,033	222,164	112,378
Swedish West Indies	507,077	53,149	569,566	91,247	241,701	18,362	204,983	39,687	193,761	41,247
Denmark and Norway†	165,568	380,535	32,023	160,757	39,783	53,134	35,487	299,822	214,617	637,146
Danish West Indies	1,316,295	486,483	1,603,494	628,256	1,231,152	631,002	1,149,641	698,302	1,281,248	568,177
Danish East Indies			7,344	2,172						
Holland or Netherlands‡	1,954,513	1,739,692	2,077,368	1,524,683	2,642,930	2,409,216	1,597,514	617,831	2,486,468	1,306,839
Dutch W. Indies and American Colonies	533,259	149,784	921,072	157,704	655,763	157,065	689,775	111,984	497,194	77,092
Dutch East Indies	133,010	1,581,803	121,441	999,571	151,120	1,750,981	61,669	638,616	163,022	1,364,884
England, Man, and Berwick	16,339,109	2,125,594	21,072,395	1,029,224	18,968,185	978,474	18,218,841	1,268,282	32,096,390	2,031,186
Scotland	1,405,448	13,683	1,615,565	10,987	1,158,495	10,104	1,196,219	14,632	1,699,526	7,657
Ireland	889,577	4,069	770,176		714,037	37,644	913,532	8,673	1,247,550	20,669
Gibraltar	956,111	513,635	525,708	626,074	876,604	1,028,272	934,402	934,445	861,733	941,981
British West Indies	264,632	470	449,601	2,540	1,617,845	10,122	1,750,703	20,305	1,635,574	11,472
— East Indies	32,089	1,934,190	67,979	1,968,365	10,642	307,738	34,354	927,716	206,450	784,629
Newfoundland and British Fisheries	260	4,478	1,314		3,183	2,560	7,243		16,068	
British American Colonies	2,009,336	455	1,881,273	16,286	1,815,113	3,547	1,773,107	2,617	2,638,224	1,740
— African Ports	9,953	5,013							7,735	1,977
Other British Colonies	12,113	2,357	4,850		26,232	463	20,463	2,311	23,612	2,025
The Hanse Towns and Ports of Germany	1,535,506	597,038	1,644,226	860,789	1,582,354	1,587,085	859,383	1,003,890	1,144,474	1,976,559
French European Ports on the Atlantic	5,093,843	349,010	4,561,299	1,210,533	4,677,914	2,527,656	7,585,815	1,095,612	7,338,693	2,625,968
Ditto on the Mediterranean	69,855	10,551	183,191	70,337	323,861	1,171,698	265,815	750,431	187,242	726,499
French W. Indies and American Colonies	846,597	49,838	918,699	42,303	804,218	63,377	770,515	41,217	937,368	74,588
French East Indies	5,784	1,784								
Bourbon and Mauritius§	19,600	22,556	17,952	71,018			36,692	6,207	40,125	41,202
Other French African Ports									368	
Haiti	1,740,383	530,218	1,746,107	373,704	1,670,140	708,642	1,901,926	463,229	1,648,055	406,560
Spanish European Ports on the Atlantic	324,706	189,900	116,270	67,742	130,966	65,966	140,436	366,434	73,515	82,722
Ditto on the Mediterranean	24,225	915	25,200	1,364	20,876	19,447	9,840		18,814	6,336
Teneriffe and the other Canaries	74,828	48,637	85,937	29,140	58,002	21,216	42,845	20,144	70,380	21,271
Florida	309,248	49,522								
Manilla and Philippine Islands	1,359	209,964		11,799	5,449	41,275	8,958	210,562	23,169	185,554
Honduras, Campeachy, and Musquito Shore	99,895	106,830	123,115	127,943	211,383	100,052	157,060	194,365	57,286	23,543
Cuba	2,950,055	1,590,625	3,201,045	1,069,573	3,271,270	2,134,095	3,611,693	2,195,840	3,276,556	1,844,146
Spanish West Indies	175,217	33,604	150,435	7,606	256,033	25,405	306,896	233,718	216,102	22,156
Spanish South American Colonies	508,176	529,559	1,592,767	1,828,286	1,372,526	3,229,347				
South America and Mexico							2,827,521	5,040,966	3,419,158	7,757,325
Portugal	147,726	66	102,935	18,555	48,077	300	77,255	5,168	110,015	2,824
Madeira	193,414	26,667	186,952	4,662	117,685	3,976	315,896	26,347	122,840	55,326
Fayal, and the other Azores	26,337	11,158	33,160	10,454	27,841	15,704	17,463	4,023	33,421	4,695
Cape de Verd Islands	22,176	7,656	34,941	35,832	22,055	11,010	51,019	21,665	60,072	18,967
Coast of Brazil and other American Colonies|| . . . . .	885,348	496,412	1,217,411	246,518	1,062,209	279,181	1,669,754	602,150	1,641,296	752,458
Italy and Malta	410,171	689,496	560,714	889,470	115,994	951,911	76,868	587,480	66,605	578,434
Trieste, and other Austrian Ports on the Adriatic	31,781	308,580	38,752	436,968	25,697	919,618	6,596	518,057	8,834	643,568
Turkey, Levant, Egypt, Mocha, and Aden	30,883	406,997	6,124	405,197	4,877	559,783	25,171	314,257	34,373	364,591
Morocco and Barbary States							1,694	3,819	3,589	3,720
Cape of Good Hope			6,150							
China	388,535	3,902,025	439,230	5,506,138	288,375	4,347,656	330,466	4,970,705	160,059	5,410,456
Asia—generally	32,467	1,180,797	74,346	1,087,989	55,902	436,759	19,271	450,358	37,486	675,567
West Indies, ditto	513,039	47,474	515,729	24,331	554,273	59,417	559,998	39,886	646,638	23,080
Europe, ditto	183,854	10,782	58,575	6,391	10,994	17,956	55,401	1,608	16,312	135
Africa, ditto	85,062	41,629	71,968	69,410	49,971	55,999	83,900	64,506	59,365	35,720
South Seas	40,325	31,080	37,209	11,934	21,741	45,429	44,063	119,367	29,090	27,164
N. West Coast of America	94,493	282,505	54,799	110,790			9,703	29,675	11,500	43,601
TOTAL	43,671,894	21,302,488	49,874,079	22,286,022	47,155,408	27,543,622	50,649,500	25,337,157	66,944,745	32,590,643

* After 1823, the Exports were to Sweden and Norway.

† After 1824, to Mauritius.

‡ After 1823, to Denmark.

§ After 1823, to Brazil.

¶ After 1824, to the Netherlands.

COMMERCE.—TABLE III.—CONTINUED.

DESTINATION AND VALUE OF EXPORTS, DOMESTIC AND FOREIGN, FROM 1821 TO 1830.

WHITHER EXPORTED.	1826.		1827.		1828.		1829.		1830.	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.	Produce.
	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
Russia	11,044	163,604	45,510	336,734	108,922	341,573	51,684	384,542	35,461	381,114
Prussia	15,129	3,421	8,515	.....	15,430	.....	14,411	.....	16,501	.....
Sweden and Norway	126,034	88,489	201,488	207,553	256,532	215,222	122,663	126,971	181,353	189,949
Swedish West Indies	120,573	23,284	416,822	25,014	611,584	23,516	684,523	23,791	552,700	37,727
Denmark	100,582	245,288	148,958	253,983	150,979	386,689	73,597	13,166	76,292	29,048
Danish West Indies	1,391,004	676,001	1,463,691	538,190	2,202,465	608,034	1,942,010	282,401	1,688,022	220,723
Netherlands	1,970,199	1,899,857	2,339,381	888,950	1,863,767	365,646	3,095,857	889,330	3,364,551	675,527
Dutch West Indies	434,125	57,426	387,573	44,162	415,343	41,616	379,874	18,667	319,495	42,298
Dutch East Indies	57,506	374,957	38,859	127,749	83,710	313,277	62,074	176,318	63,273	107,293
England, Man, and Berwick	19,065,135	1,569,023	23,514,421	904,596	18,737,661	2,960,261	21,281,334	1,767,457	23,773,020	826,946
Scotland	572,894	2,952	1,336,169	.....	959,560	7,927	895,315	19,493	1,465,211	2,488
Ireland	775,137	6,684	637,120	.....	394,450	810	327,728	366	261,687	.....
Gibraltar	692,396	1,055,525	1,040,999	864,387	899,411	508,719	301,132	160,130	513,248	370,150
British East Indies	24,226	418,042	32,717	1,018,733	45,199	795,682	69,070	477,623	93,731	553,126
West Indies	2,078,871	31,931	683,106	7,470	26,149	2,706	1,463	5,068	140	1,761
Mauritius and Bourbon*	13,893	22,000	.....	.....	.....	.....	10,502	.....	.....	.....
British American Colonies and Newfoundland	2,564,165	24,630	2,797,014	33,734	1,618,288	56,386	2,724,104	40,805	3,650,031	136,342
Other British Colonies	34,378	500	.....	.....	.....	.....	.....	.....	.....	.....
The Hanse Towns and Ports of Germany	979,313	1,137,384	1,693,971	1,319,214	1,804,333	1,190,918	1,998,176	1,278,984	1,549,732	725,148
French European Ports on the Atlantic	9,075,254	1,315,178	8,712,011	2,555,869	7,091,699	3,095,826	8,008,923	2,105,573	9,183,894	661,925
Ditto on the Mediterranean	273,675	483,677	475,547	781,076	606,638	279,407	886,122	748,777	717,252	430,868
French East Indies	904,115	52,059	979,697	61,156	1,009,437	15,334	1,056,639	15,768	792,241	13,528
African Ports	512	959	.....	.....	.....	.....	.....	.....	5,931	579
Haiti	1,252,910	161,584	1,162,473	169,436	1,123,405	269,306	814,987	160,171	714,791	108,387
Spanish European Ports on the Atlantic	71,313	22,227	74,761	47,778	40,946	199,953	545,753	139,732	538,956	61,327
Ditto on the Mediterranean	80,964	20,046	62,353	7,112	66,844	61,193	185,952	45,700	145,556	.....
Teneriffe and the other Canaries	42,761	21,742	46,163	39,817	33,529	8,551	42,839	23,317	19,040	610
Manilla and Philippine Islands	14,133	88,207	.....	.....	19,914	141,838	10,802	66,430	39,129	54,539
Cuba	3,749,658	2,382,774	4,160,747	2,655,341	3,912,997	2,490,994	3,719,263	1,859,626	3,439,060	1,477,675
Other Spanish West Indies	210,888	12,668	218,156	10,353	222,191	15,677	209,780	38,900	245,636	27,523
Portugal	99,948	538	116,103	220	77,010	1,164	42,088	628	43,408	1,803
Madeira	119,059	25,549	100,153	18,281	101,948	9,985	175,074	15,089	155,719	12,358
Fayal, and the other Azores	16,976	2,495	13,487	4,861	19,559	4,719	7,949	78	6,649	1,524
Cape de Verd Islands	36,693	9,299	80,010	24,155	67,502	9,727	68,528	13,477	50,560	7,778
Italy and Malta	81,622	448,599	74,417	535,804	279,520	641,230	259,755	611,257	326,239	414,121
Trieste, and other Ports on the Adriatic	13,387	273,933	42,671	234,122	119,233	206,255	409,288	280,200	300,859	293,261
Turkey, Levant, and Egypt, Greece, and Grecian Archipelago	46,897	271,438	131,734	470,325	78,374	124,567	27,600	47,384	75,801	337,539
Morocco and Barbary States . . . . .	.....	.....	14,634	.....	.....	.....	.....	.....	.....	.....
Cape of Good Hope	21,154	6,433	.....	2,003	.....	.....	.....	.....	.....	.....
China	242,461	2,324,193	290,862	3,573,543	230,385	1,252,417	260,759	1,094,103	156,290	585,903
Mexican Ports on the Atlantic	1,024,275	5,256,776	886,907	3,286,350	522,016	2,364,468	495,626	1,835,525	985,764	3,861,694
Central Republic of South America	79,294	40,480	147,574	77,198	106,773	52,499	123,631	116,223	138,456	111,662
Honduras, Campeachy, &c. . . . .	.....	.....	13,281	1,573	5,950	2,371	12,693	8,229	25,132	5,432
Colombian Ports on the Atlantic	946,014	1,006,658	611,312	333,222	560,846	323,678	525,783	241,565	316,732	150,258
Brazil	1,597,344	603,005	1,485,433	377,373	1,505,770	482,935	1,510,260	419,667	1,600,999	242,239
Buenos Ayres†	222,832	156,508	100,780	50,424	94,372	59,856	444,716	181,336	425,220	204,667
Chili	512,650	934,848	1,040,748	661,853	1,519,978	1,109,424	890,356	530,778	915,718	620,396
Peru	278,724	231,175	202,944	70,077	189,389	100,555	91,542	119,615	32,400	39,402
South America—generally	56,725	8,008	71,537	21,469	146,967	13,808	147,670	6,175	9,190	170
Asia, ditto	17,565	387,490	21,130	640,670	46,776	356,835	40,721	232,768	56,318	229,290
West Indies, ditto	603,807	14,062	454,904	11,956	437,916	22,261	359,406	10,123	242,114	5,010
Europe, ditto	166,875	12,443	150,236	779	46,586	9,367	102,364	250	16,090	22,653
Africa, ditto	108,226	54,840	126,968	67,872	131,249	26,361	108,837	49,516	95,867	52,236
South Seas	27,468	62,869	24,923	287	42,147	40,989	45,969	20,991	21,178	6,764
North West Coast of America	29,921	74,870	37,702	40,882	39,020	55,365	2,911	4,399	28,392	24,698
TOTAL	53,055,710	24,539,612	58,921,691	23,403,136	50,669,669	21,595,017	55,700,193	16,658,478	59,462,029	14,387,479

* After 1823, the exports were to Bourbon.

† After 1828, to the Argentine Republic.

COMMERCE.—TABLE IV.

A SUMMARY STATEMENT OF THE VALUE OF GOODS IMPORTED, FROM THE 1ST OF OCT. 1829, TO THE 30TH SEPT. 1830.

SPECIES OF MERCHANDISE.	VALUE.	SPECIES OF MERCHANDISE.	VALUE.
MERCHANDISE FREE OF DUTY.	Dollars.	MERCHANDISE SUBJECT TO DUTIES AD VALOREM.	Dollars.
Articles imported for the use of the United States	430	Lace—Of thread, silk, or cotton	824,997
Articles specially imported for Philosophical Societies, &c.—		Coach	3,026
Philosophical apparatus, instruments, &c.	9,830	Flax—Linen, bleached and unbleached	2,485,053
Books, maps, and charts	19,621	Checks and stripes	42,725
Paintings and drawings	322	Other manufactures of	483,502
Medals, and collections of antiquity	95	Hemp—Ticklenburgs, osnaburgs, and burlaps	563,665
Anatomical preparations	274	Sheeting, brown	209,152
Antimony, regulus of	6,745	Ditto white	41,085
Lapis calaminaris, tutanag, spelter, or zinc	2,560	All other manufactures of	153,103
Burstones, unwrought	16,317	Clothing, ready made	46,789
Brimstone and sulphur	17,240	Hats, caps, and bonnets—Leghorn, straw, chip, &c.	326,793
Cork tree, bark of	2,538	Fur, wool, leather, or silk	49,604
Clay, unwrought	9,048	Iron, or Iron and Steel Wire—	
Rags of any kind of cloth	72,661	Side arms and fire arms, other than muskets and rifles	179,153
Furs of all kinds	305,732	Drawing knives, axes, adzes, and socket chisels	29,007
Hides and skins, raw	2,403,850	Bridle-bits of every description	62,271
Plaster of Paris	125,606	Steelyards, scalebeams and vices	30,999
Specimens of botany, natural history, and mineralogy	6,118	Cutting knives, sthes, sickles, reaping hooks, spades and	
Models of invention and machinery	897	shovels	95,004
Barilla	66,222	Screws weighing 24 pounds or upwards	17
Wood, dye	279,411	Wood screws	66,817
unmanufactured mahogany	286,825	Other articles not specified	2,908,978
Animals for breed	23,151	Copper—Vessels of	1,235
Pewter, old	815	All other manufactures of	15,198
Tin in pigs and bars	101,341	Gold and silver—Lace	3,191
Brass in pigs and bars	29,615	Watches, and parts thereof	312,924
old	3,314	Articles composed of, &c.	65,026
Copper in pigs and bars	403,203	Wares—Glass not subject to specific duties	119,925
in plates, suited to the sheathing of ships	283,785	China or porcelain	90,583
for the use of the Mint	14,435	Earthen and stone	1,168,477
old, fit only to be re-manufactured	83,413	Japanned	36,233
Bullion, gold	115,267	Plated	95,225
silver	1,049,343	Gilt	60,785
Specie, gold	705,879	Brass	329,716
silver	6,285,475	Tin	5,248
All other articles	8,787	Pewter and lead, except shot	24,409
TOTAL	12,746,245	Wood, including cabinet wares	112,047
MERCHANDISE SUBJECT TO DUTIES AD VALOREM.		Leather, including saddles, bridles, and harness	499,923
Manufactures of		Plated saddlery, coach and harness furniture	47,872
Wool, or of which wool is a component material—		Marble, and manufactures of	14,417
Not exceeding 50 cents per square yard	452,743	Square wire, used for umbrella stretchers	5,550
Exceeding 50 cents, and not exceeding 100 cents, per ditto	1,083,915	Ciphering slates	11,526
Ditto 100 ditto 250 ditto	1,236,060	Prepared quills	15,881
Ditto 250 ditto 400 ditto	75,706	Blacklead pencils	4,850
Ditto 400 ditto	6,015	Paper hangings	59,524
Blankets	594,044	Brushes of all kinds	9,362
Hosiery, gloves, mits, &c.	133,453	Hair seating	25,332
Bombazines	33,887	Bolting cloths	39,153
Worsted stuff goods	1,397,545	Copper bottoms, cut round, raised to the edge	3,609
All other manufactures of	319,306	Quicksilver	314,167
Cotton—Printed or coloured	4,356,675	Brass, in plates	10,608
White	2,487,804	Tin, in plates	390,900
Hosiery, gloves, mits, and bindings	387,454	Crude saltpetre	32,214
Twist yarn, and thread	172,785	Opium	139,596
Nankeens	228,233	Unmanufactured—Raw silk	119,074
All other manufactures of	229,375	Articles not specially enumerated, subject to a duty of 12 1-2	
Vestings and plaids—Of wool, or wool and cotton, or silk	53,916	per cent.	883,685
Of cotton, or cotton and silk	2,292	Ditto ditto 15 per cent	2,558,858
Silk—From India, piece goods	1,357,092	Ditto ditto 20 "	105,610
Ditto other manufactures	31,224	Ditto ditto 25 "	101,103
From other places, piece goods	2,824,918	Ditto ditto 30 "	389,821
Ditto other manufactures	1,550,776	Ditto ditto 33 1-2 "	761
		Ditto ditto 35 "	1,233
		Ditto ditto 40 "	14
		Ditto ditto 45 "	813
		Ditto ditto 50 "	2,610
		TOTAL	35,835,450

COMMERCE.—TABLE IV.—CONTINUED.

SPECIES OF MERCHANDISE.	VALUE.	SPECIES OF MERCHANDISE.	VALUE.
MERCHANDISE PAYING SPECIFIC DUTIES.	Dollars.	MERCHANDISE PAYING SPECIFIC DUTIES.	Dollars.
Manufactures of wool, not exceeding 33 1-2 cents per square yard	266,060	Cordage—Tarred and cables	71,291
Carpeting—Brussels, Turkey, and Wilton	77,562	Untarred and yarn	8,114
Venetian and ingrain	123,950	Twine, packthread, and sein	75,006
All other of wool, flax, or cotton	137	Corks	30,730
Patent printed or stained floorcloths	19,865	Copper—Rods and bolts	262
Oilcloth, other than patent floorcloth	762	Nails and spikes	2,141
Furniture oilcloth	2,596	Fire-arms—Muskets	25,142
Floor matings of flags or other materials	9,486	Rifles	85
Sail duck	317,347	Iron—Iron and steel wire	59,485
Cotton bagging	69,126	Tacks, brads, and sprigs	2,799
Wines—Madeira	330,423	Nails	40,906
Sherry	69,547	Spikes	1,391
Red, of France and Spain	273,033	Cables and chains, or parts thereof	25,885
Of France, Spain, and Germany, not enumerated	424,304	Mill-cranks, and mill-irons of wrought iron	200
Of Sicily and other countries, and all wines not enumerated, in casks and bottles	437,795	Mill-saws	12,252
Foreign spirits—From grain	205,704	Anchors	1,121
From other materials	453,286	Anvils	31,249
Molasses	995,776	Hammers and sledges for blacksmiths	3,096
Beer, ale, and porter	60,420	Castings, vessels and all other	38,686
Vinegar	4,241	Braziers' rods or round iron, of 3-10 to 8-16 diameter inclusive	5,945
Oil—Foreign fishing, spermaceeti, whale, olive (in casks,) castor, linseed, and hempseed	18,074	Nail or spike rods, slit	784
Teas—Bohea, souchong and other black, hyson skin and other green, hyson and young hyson, imperial, gunpowder, and Gomei	2,425,018	Sheets and hoop	59,822
Coffee	4,227,021	Slit or rolled, &c.	81
Cocoa	137,453	In pigs	25,644
Chocolate	899	Bar and bolt, rolled	226,336
Sugar—Brown	3,985,665	hammered	1,730,375
White, clayed, &c.	644,477	Steel	291,957
Candy and loaf	571	Hemp	200,338
Other refined	■	Flax, unmanufactured	39,055
Fruits—Almonds, currants, prunes and plums, figs, raisins (in jars and boxes,) and all other	520,275	Wheat flour	599
Spices—Ginger, Cayenne pepper, mace, nutmegs, cinnamon, cloves, black pepper, pimento, and cassia	457,723	Wool, unmanufactured	96,853
Candles—Spermaceeti and wax	519	Salt	671,979
Tallow	8,959	Coal	204,773
Cheese	8,898	Wheat	492
Soap	3,310	Oats	378
Tallow	43	Potatoes	9,189
Lard	10	Paper—Folio and quarto post, foolscap, drawing, and writing, printing, copperplate, and stainers', sheathing, binders', wrapping, box boards, &c.	110,408
Beef and pork	23,220	Printed books, in all languages	130,632
Bacon	681	Glassware—Cut and not specified	6,192
Butter	652	All other articles of	129,632
Saltpetre	80	Glass—Apothecaries' phials, not above 8 oz.	3,473
Camphor, crude	26,374	Bottles, not above 1 gallon	52,991
Salts, Epsom	111	Demijohns	15,634
Tobacco, manufactured, other than snuff and cigars	224	Window	25,597
Snuff	834	Fish—Foreign, dried or pickled	27,624
Indigo	715,715	Shoes and slippers	5,362
Cotton	34,737	Boots and booties	1,013
Gunpowder	20,488	Cigars	251,818
Bristles	26,518	Playing cards	430
Glue	3,110	Roofing slates	34,683
Ochre—Dry	21,182		
In oil	430	Value of merchandise paying specific duties	22,295,225
White and red lead	14,231	Ditto ditto paying ad valorem duties	35,835,450
Whiting, and Paris white	3,933	Ditto ditto free of duty	12,746,215
Sugar of lead	11,846		
Lead—Bar, sheet, and pig	19,757		
Shot	1,638		
		TOTAL	70,876,920

COMMERCE.—TABLE V.

A STATISTICAL VIEW OF THE VALUE OF IMPORTS FROM, AND EXPORTS TO, EACH FOREIGN COUNTRY, AND THE TONNAGE OF AMERICAN AND FOREIGN VESSELS EMPLOYED, FOR THE YEAR ENDING SEPT. 30, 1830.

COUNTRIES.	COMMERCE.				NAVIGATION.			
	VALUE OF IMPORTS.	VALUE OF EXPORTS.			AMERICAN TONNAGE.		FOREIGN TONNAGE.	
		Domestic Produce.	Foreign Produce.	TOTAL.	Entered into the U. S.	Departed from the U. S.	Entered into the U. S.	Departed from the U. S.
	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Russia	1,621,899	35,461	381,114	416,575	13,681	3,492	264	264
Prussia	16,605	16,501	.....	16,501	372	232	.....	.....
Sweden and Norway	1,168,110	181,353	189,949	371,302	15,144	3,502	2,935	2,023
Swedish West Indies	230,530	552,700	37,727	590,427	10,406	19,960	965	984
Denmark	5,384	76,292	29,048	105,340	877	1,923	.....	.....
Danish West Indies	1,665,834	1,688,022	220,723	1,908,745	38,767	52,535	600	849
Netherlands	888,408	3,354,551	675,527	4,030,078	42,998	35,220	793	4,515
Dutch East Indies	181,849	63,273	107,293	170,566	662	1,501	.....	220
— West Indies	286,509	319,495	42,298	361,793	12,047	11,043	248	124
England	22,755,040	23,773,020	826,946	24,599,966	199,972	192,714	61,355	58,539
Scotland	1,392,841	1,465,211	2,488	1,467,699	5,784	6,913	12,560	7,707
Ireland	381,333	261,687	.....	261,687	5,494	4,594	6,949	2,570
Gibraltar	90,028	513,248	370,150	883,398	3,346	13,450	.....	.....
British East Indies	1,373,297	93,731	553,126	646,557	4,806	4,029	.....	.....
— West Indies	168,579	140	1,761	1,901	22,428	2,395	275	.....
Newfoundland . . . . .	.....	.....	.....	.....	452	1,523	.....	.....
British American Colonies	650,303	3,650,031	136,342	3,786,373	130,527	117,171	4,002	14,267
— African ports	2,300	.....	.....	.....	.....	510	.....	.....
Other British Colonies	1,263	.....	.....	.....	396	.....	.....	.....
Hanse Towns	1,873,253	1,549,732	725,148	2,274,880	17,259	14,728	8,498	10,262
France on the Atlantic	6,831,015	9,183,894	661,925	9,845,819	79,459	82,521	4,061	6,014
Ditto on the Mediterranean	891,183	717,252	430,888	1,148,140	15,406	18,967	205	1,074
French West Indies	518,687	792,241	13,528	805,769	25,928	47,129	5,945	4,325
— African Ports . . . . .	.....	5,931	579	6,510	.....	106	.....	.....
Spain on the Atlantic	461,267	538,956	61,327	600,283	16,288	9,387	.....	.....
Ditto on the Mediterranean	543,271	145,556	.....	145,556	10,920	3,017	.....	.....
Teneriffe, and other Canaries	99,878	19,040	610	19,650	1,762	796	.....	.....
Manilla and Philippine Islands	384,887	39,129	54,539	93,668	2,774	458	122	.....
Cuba	5,577,230	3,439,060	1,477,675	4,916,735	97,644	114,054	12,954	11,356
Other Spanish West Indies	1,307,148	245,636	27,523	273,159	19,031	8,734	625	489
Portugal	165,321	43,408	1,803	45,211	12,287	2,243	.....	184
Madeira	239,662	155,719	12,358	168,077	3,212	6,080	114	.....
Fayal, and the other Azores	32,912	6,649	1,524	8,173	634	244	137	137
Cape de Verd Islands	33,768	50,560	7,778	58,338	1,253	2,628	.....	.....
Italy	940,254	326,239	414,121	740,360	5,062	6,626	.....	418
Sicily	3,740	.....	.....	.....	1,697	135	.....	.....
Trieste, and other Adriatic ports	132,093	300,859	293,261	594,120	4,332	4,662	.....	282
Ragusa, and the Seven Islands . . . . .	.....	.....	.....	.....	345	.....	.....	.....
Turkey, &c.	417,392	75,801	337,539	413,340	3,668	2,587	.....	.....
Hayti	1,597,140	714,791	108,387	823,178	18,513	19,395	1,633	1,748
Mexico	5,235,241	985,764	3,851,694	4,837,458	22,062	27,295	4,362	3,551
Central Republic	302,833	138,456	111,662	250,118	4,660	3,044	.....	.....
Colombia	1,120,095	316,732	180,258	496,990	13,514	5,955	1,076	62
Honduras	1,472	25,132	5,432	30,564	68	1,042	.....	.....
Brazil	2,401,460	1,600,999	242,239	1,843,238	38,005	44,450	248	601
Argentine Republic	1,431,883	425,220	204,667	629,887	6,584	9,565	225	116
Cisplatine Republic . . . . .	.....	.....	.....	.....	236	1,373	.....	.....
Chili	182,585	915,718	620,396	1,536,114	304	12,287	.....	.....
Peru	972,884	32,400	39,402	71,802	3,276	732	.....	.....
South America, generally	40,269	3,190	170	9,360	394	679	.....	155
China	3,878,141	156,290	585,903	742,193	8,695	3,501	.....	.....
Asia, generally	98,451	56,318	229,290	285,608	1,679	3,697	.....	.....
West Indies, ditto	7,366	242,114	5,010	247,124	2,288	7,417	.....	260
East Indies, ditto . . . . .	.....	.....	.....	.....	.....	424	.....	.....
Europe, ditto	394	16,090	22,653	38,743	1,904	941	141	.....
Africa, ditto	172,861	96,867	52,236	149,103	2,730	2,560	618	290
Cape of Good Hope . . . . .	.....	.....	.....	.....	.....	580	.....	.....
South Seas	20,748	21,178	6,764	27,942	15,392	28,222	.....	.....
North West Coast of America . . . . .	.....	28,392	24,698	53,090	.....	822	.....	.....
TOTAL	70,876,920	59,462,029	14,387,479	73,849,508	967,227	971,760	131,900	133,436

CHAPTER IV.

FINANCES—REVENUE, EXPENDITURE, DEBT.

THE revenue of the United States is derived chiefly from the duties levied on the importation of foreign commodities, or the sale of public lands; the former source at present* producing twenty-two parts (22,681,996 dollars) out of twenty-four of the whole amount, (24,767,122 dollars,) the remaining twelfth being raised from the latter, (1,457,004 dollars;) together with dividends or sales of bank stock, (490,000 dollars;) the arrears of internal duties, (14,404 dollars;) direct taxes, (11,231 dollars;) and miscellaneous charges, (112,425 dollars.) The post-office department has frequently been a source of gain to the treasury; but in the year 1819, the whole amount received appears to have been expended in improvements of the post-roads, and, indeed, for the last ten years it has not, for a similar reason, been at all materially productive. We shall notice very briefly each of the sources from which the revenue is derived.

The present rates of duty imposed on the most important articles imported from foreign countries have been given in a table at the close of the chapter on manufactures, as indicative of the extent to which they are severally protected. The amount received from the customs annually, from 1791 to 1830, will be found in Table I., at the end of this chapter. It will be perceived that from the year 1792, when it was 3,443,070 dollars, it gradually rose to the year 1808, when it reached 16,363,550 dollars. This increase manifests very decidedly the progressive prosperity of the republic during that period, since it did not accrue from any increase of the rate of the imports, but of the quantity of the articles consumed or the amount of the tonnage employed. During the years 1809–10, in consequence of the embargo, the amount declined to about half the sum; in 1811 it reached thirteen millions of dollars; but, in consequence of the war, it sank again, in 1812, to under nine millions of dollars. In July of that year the rate of duties was doubled; and in 1813, they exceeded thirteen millions of dollars: in 1814, however, in consequence of the continuance of the war, and the effectual manner in which the British navy blockaded the American coast, they did not amount to six millions of dollars, and in 1815, a little exceeded seven millions of dollars. After the close of the war, the double duties, which were continued to the 30th of June, 1816, and the immense

importation of goods which the active competition of British manufacturers and merchants poured into the United States, raised the amount of customs for the year 1816 to the surprising sum of 36,306,874 dollars, the highest amount, by nearly one third, they have ever attained. The tariff which was established on the abandonment of the war duties, in June, 1816, was at a considerably higher rate than the old duties, and produced, in 1817, a revenue of upwards of twenty-six millions of dollars. The American market, during the first two years of peace, was glutted with foreign manufactures, and consequently, a reaction in the imports took place, which reduced the amount, in 1818, to little more than seventeen millions of dollars; in 1819 it reached twenty millions of dollars; from 1820 to 1825 the amount varied from thirteen to twenty millions of dollars. Since that time it has, with the exception of 1827, been about twenty-three millions of dollars. It is generally understood (although we have not received the official returns) that in consequence of the large importations under the high duties imposed by the tariff of 1828, the revenue derived from the customs this year will reach twenty-eight millions of dollars, an amount greater than that of any year since the establishment of the republic, except the first after the war.†

The sale of public lands is at present almost the only real source of revenue besides the customs; for although an amount of 499,000 dollars from dividends on stock in the bank of the United States appears in the statement of receipts, while any public debt remains, that sum, or nearly so, must be paid to the public creditor as interest on the debt, of which the loan to the United States bank forms a part, and upon which the interest paid by the bank cannot therefore be esteemed as clear revenue. The title of the United States to the public lands is derived from three distinct sources: first, from treaties with foreign nations, by which territory has been acquired, or boundaries settled; secondly, by treaties with the Indian tribes, by which, for a certain remuneration, the title of the natives to the land has been extinguished; and thirdly, from cessions of territories made by individual states to the general government. It cannot be matter of surprise, that the title of the United States should be frequently disputed by individuals, on the ground of claims existing previously to the cession of the land in question to the government. No less than fourteen extensive claims are

* These statements and calculations are founded on the official reports of the year ending 30th of September, 1829.

† Since these sheets were prepared for the press, the Report of

the Finances of the United States has been received, in which the receipts for the year ending 30th September, 1831, are estimated to be 28,000,412 dollars.

stated by Seybert,* some of them arising from alleged purchases from the Indians, which however were, even if substantiated, undoubtedly contrary to law, and others originating in grants from officers of the different governments to which the territory belonged before its acquisition by the United States, but of which the evidence of confirmation by their respective governments is either totally wanting or incomplete. Our limits will not permit us to state the details of these disputed claims: there is one, however, both from its peculiar character and its magnitude, too remarkable to be passed over. The Yazoo claims, as they were called, embraced 35,000,000 acres in the Mississippi territory, and were derived from a pretended sale by the legislature of Georgia, but declared null, as fraudulent, by a subsequent legislature. "The evidence, as published by the state of Georgia, and by congress," says Dr. Seybert, "shows that that transaction, even if considered as a contract, is, as such, on acknowledged principles of law and equity, null, *ab initio*; it being in proof that all the members of the legislature who voted in favour of the sale, that is to say, the agents who pretended to sell the property of their constituents, were, with the exception of a single person, interested in, and parties to the purchase." This claim, however, was arranged by commissioners appointed by congress in 1814, and treasury certificates to the amount of more than four millions of dollars were awarded among the various claimants.

On the 10th of May, 1800, an act of congress was passed, laying the foundation of the land system, as it now exists. Under this law, all the lands, before they are offered for sale, are surveyed, on a rigidly accurate plan; at the expense of the government. This is the corner-stone of the system. In this consists its great improvement over the land system of Virginia, according to which, warrants were granted to those entitled to receive them, for tracts of unsurveyed public land. These warrants might be located on any land not previously appropriated. In the absence of geometrical surveys, it was difficult, by natural boundaries, Indian paths, and buffalo traces, to identify the spots appropriated. The consequence was, that numerous warrants were laid on the same tract, conflicting claims arose, and the land titles of the country were brought into a state of the most

perplexing and injurious embarrassment. The state of Kentucky, and that portion of Ohio allotted as bounty-lands to the Virginia troops, have constituted one great theatre of litigation, from their first settlement. On the other hand, land titles acquired under the system of the United States are almost wholly exempt from controversies arising from uncertainty of location or boundary. The surveys of the public lands of the United States are founded upon a series of true meridians. The first principal meridian is in Ohio, the second in Indiana, the third in Illinois, &c., each forming the base of a series of surveys, of which the lines are made to correspond, so that the whole country is at last divided into squares of one mile each, and townships of six miles each; and these subdivisions are distributed with mathematical accuracy into parallel ranges. The greatest division of land marked out by the survey is called a township, and contains 36,000 acres, being six English or American miles square. The township is subdivided into thirty-six equal portions, or square miles, by lines, crossing each other at right angles. These portions are called sections. The section contains 3600 acres, and is subdivided into four parts, called quarter-sections, each of which, of course, contains 900 acres. The quarter-sections are finally divided into two parts, called half-quarter-sections, of 450 acres each, and this is the smallest regular subdivision known to the system. The sectional and quarter-sectional divisions are designated by appropriate marks in the field, which are of a character to be easily distinguished from each other. The half-quarter-sections are not marked in the field, but are designated on the plot of the survey, by the surveyor-general marking the distance on one of the ascertained lines, in order to get the quantity of such half-quarter-sections as exhibited by his plan of survey. The fractional sections, which contain less than 450 acres, are not subdivided; the fractional sections which contain 450 acres and upwards are subdivided in such a manner as to preserve the most compact and convenient forms. A series of contiguous townships laid off from north to south is called a range. The ranges are numbered north and south from the base, or standard line, running due east and west. They are counted from the standard meridian, east and west.† The dividing lines of the sections, of course,

* Statistical Annals, chap. v. p. 355.

† The following first section of a private act, passed in 1825, may serve as a specimen of the nomenclature by which lots of land may be indicated in the system of the public surveys:—"Be it enacted by the senate and house of representatives of the United States of America, in congress assembled, that, when the secretary of the treasury shall be satisfied that John Johnson of Indiana, did

enter at the Brookville land-office, in said state, the east half of the north-east quarter of section thirty-five, and the west half of the north-west quarter of section thirty-six in township seventeen north, in range four east, by mistake, instead of the east half of the south-east quarter, and the west half of the south-west quarter of the said sections, it shall be lawful for a patent to be issued to the said Johnson, for the two last mentioned half quarters, so in-

run by the cardinal points, except where what is called a fractional section is created by a navigable river or an Indian boundary.

The superintendence of the surveys is committed to five surveyors-general. One thirty-sixth part of all the lands surveyed, being section No. 16, in each township, is reserved from sale, for the support of schools in the township; and other reservations have been made for colleges and universities. All salt springs and lead mines are also reserved, and are subject to be leased under the direction of the president of the United States. Whenever the public interest is supposed to require that a certain portion of territory should be brought into market, for the accommodation of settlers or others who may wish to become purchasers, the president issues instructions to the surveyor-general, through the commissioner of the general land office, at Washington, to have such portion of territory surveyed. The surveyor-general makes this requisition publicly known to those individuals who are in the habit of contracting for public surveys; and a contract for the execution of the surveys required is entered into between the surveyor-general and deputy surveyors. The contract is given to the lowest bidder, provided the surveyor-general be fully satisfied of his capacity to fulfil the contract. The maximum price established by law for executing the public surveys is three dollars a mile, in the upland and prairie countries. In the southern parts of the United States, where the surveys are rendered difficult by the occurrence of bayous, lakes, swamps, and cane-brakes, the maximum price established by law is four dollars a mile. The deputy surveyors are bound by their contract to report to the surveyors-general the field notes of the survey of each township, together with a plan of the township. From these field notes the surveyor-general is enabled to try the accuracy of the plan returned by the deputy surveyor, and of the calculations of the quantity in the legal subdivisions of the tract surveyed. From these documents three plans are caused to be prepared by the surveyor-general; one for his own office; one for the register of the proper land office to guide him in the sale of the land; and the third for the commissioner of the general land office at Washington. The government has generally found it expedient to authorize the surveying of forty townships of land annually, in each land district, so as to admit of two sales by public auction annually, of twenty townships each. The general land office at Washington is under the superintendence of an

officer, called the commissioner of the general land office. It is subordinate to the treasury department. The public lands are laid off into districts, in each of which there is a land office, under the superintendence of officers appointed by the president and senate, called the register of the land office, and the receiver of public moneys. There are at present forty-two land offices. The register and the receiver each receive a salary of 500 dollars per annum, and a commission of one per cent. on the moneys paid into their office.

Till 1820, a credit was allowed on all purchases of public lands. In consequence of this system, large quantities of land had been purchased on speculation, and in the ordinary course of purchases a vast amount of land debt to the government had been contracted. To relieve the embarrassed condition of these debtors, an act was passed, authorizing the relinquishment of lands purchased, and substituting cash payments for the credit system. The most beneficial effects have resulted from this change, apart from the relief of those who were indebted to the government. At the same time the minimum price of the land was reduced from two dollars to one dollar and twenty-five cents an acre. In the first instance the public lands are offered for sale, under proclamations of the president, by public auction, with the limitation of the minimum rate. Lands not thus sold are afterwards subject to private sale at the minimum price.

A very large amount of public land is in the occupation of persons who have settled upon it without title. This is frequently done, in consequence of unavoidable delays in bringing the land into market, and not from any intention, on the part of the settler, to delay payment. Laws have been passed, granting to settlers of this description a pre-emptive right in the acquisition of a title, that is, the preference over all other persons at private sale. These laws afford the actual settler no protection against those who might choose to overbid him at the public sales; but it is believed, that in most cases, by mutual agreement among purchasers, the actual settler is enabled to obtain his land, even at public sale, at the minimum price. It is stated, however, that great injury is done to the settlers by combinations of land speculators, who infest the public sales, purchasing the lands at the minimum price, and compelling *bona fide* settlers to take them at an enhanced valuation. Should the settler refuse such an agreement, the speculators enter into competition with him at the sale. On the whole it would appear, that, in general, the

tended to be entered, on his relinquishing to the United States his interest in, and surrendering the patent issued for, the two first

mentioned half quarters, in such manner as shall be directed by the secretary of the treasury."

government obtains but the minimum price for its lands, although what is actually sold and occupied, being the choice of the whole quantity brought into market, is, of course, worth much more.

It has been suggested, and with an appearance of justice, that the price of the public lands is still too high. The government, having already reimbursed itself for the cost of them, cannot be considered as having any other duty to perform than to promote their settlement, as rapidly as it can take place by a healthy process, and to meet the wishes of all who desire *bona fide* to occupy them. Considering the class of men most likely to take the lead in settling a new country, one hundred dollars, (the price of a half-quarter section) paid in cash to the government, is a tax too heavy perhaps for the privilege of taking up a farm in an unimproved wilderness. The price is already too low to oppose a serious obstacle to speculation; so that a considerable reduction of it would not probably increase that evil, while it would essentially relieve the *bona fide* settler. There would, in fact, perhaps be little else to object to a plan of gratuitous donation of a half-quarter-section to actual settlers, than the comparative injustice of such a plan toward those settlers who have already purchased their farms.

Five per cent. on all the sales of public lands within the several states is reserved; three fifths of which are to be expended by congress in making roads leading to the states, and two fifths to be expended by the states in the encouragement of learning. The first part of this reservation has been expended on the Cumberland-road; and the treasury of the United States is greatly in advance to that fund on account of this public work.—It appears, that up to the present time, about 150 millions of acres of the public lands have been surveyed. Of these, thirty millions have not been proclaimed for sale; twenty millions have been sold and, as much more granted by con-

gress for education, internal improvement, and other purposes. There are then 110 millions of acres surveyed, but not sold, eighty millions of which are in the market, ready for sale at the minimum price, and thirty millions subject to be proclaimed for sale whenever there is a demand. The total quantity of land, the title of which vests in the United States, is estimated by Pitkin and Seybert at 400 millions of acres: the Indian title to a very considerable proportion of this, however, is not yet extinguished. It must be evident, that while such a resource is possessed for the profitable occupation of redundant labour or capital, the labourer will never be without remunerating produce for his toil, and the capitalist will be clear of the folly, not to say the guilt, of reducing profits to such a shade, that no small manufacturer or small vender can possibly exist; and consequently, that the country so favoured will enjoy a long period of prosperity.

The total amount received by the treasury for the sale of public lands, from the year 1796 to 1829, as stated in a letter from the secretary of the treasury to the chairman of the committee of retrenchment, in April, 1830, was 32,403,527 dollars; the highest amount was in 1819, 3,274,422 dollars. It appears that the capital thrown out of employ by the destruction of manufactures, on the return of peace, was appropriated to speculations in land, in 1817, 1818, and 1819; but many of these speculations turning out unfavourably, the amount expended in the purchase of land resumed its usual level. From that year to the year 1829, the amount received from this source has varied from about one million to one million and a half of dollars; but during the last two years it has greatly increased—the amount of 1830 being 2,329,356 dollars, and the amount for the present year, as calculated by the secretary of the treasury, would prove to be about three millions and a half, a sum exceeding that of any former year.*

* It would appear that in consequence of the revenue produced from the sale of public lands being no longer needful to the general government, a most important change respecting them may possibly occur—the transfer of their title from the general government to the states where they are situated. "On this point," says Mr. McLane, "the undersigned deems it proper to observe, that the creation of numerous states throughout the western country, now forming a most important part of the union, and the relative powers claimed and exercised by congress and the respective states over the public lands, have been gradually accumulating causes of inquietude and difficulty, if not of complaint. It may well deserve consideration, therefore, whether at a period demanding the amicable and permanent adjustment of the various subjects which now agitate the public mind, these may not be advantageously disposed of in common with the others, and upon principles just and satisfactory to all parts of the union. It must be admitted that the public lands were ceded by the states, or subsequently acquired by the United States, for the common benefit, and that each

state has an interest in their proceeds, of which it can not be justly deprived. Over this part of the public property the powers of the general government have been uniformly supposed to have a peculiarly extensive scope, and have been construed to authorize their application to the purposes of education and improvement, to which other branches of revenue were not deemed applicable. It is not practicable to keep the public lands out of the market; and the present mode of disposing of them is not believed to be the most profitable either to the general government or to the states, and must be expected, when the proceeds shall be no longer required for the public debt, to give rise to new and more serious objections.

"Under these circumstances, it is submitted to the wisdom of congress to decide upon the propriety of disposing of all the public lands in the aggregate, to those states within whose territorial limits they lie, at a fair price, to be settled in such manner as might be satisfactory to all. The aggregate price of the whole may then be apportioned among the several states of the union, according to such an equitable ratio as may be consistent with the

Respecting the internal revenue, as it has almost ceased to exist except in the shape of arrears, it is unnecessary to enter into any lengthened detail. Soon after the establishment of the government, it was found necessary to impose internal taxes, and the articles made liable to them are stills and spirits, snuff, refined sugar, sales at auction, licenses to retail wines and spirituous liquors, carriages for the conveyance of passengers, and stamped paper. It is interesting to observe the regular and rapid increase in the product of these duties, from about 209,000 dollars to upwards of one million, from 1792 to 1801. As the rate of duty was not increased, it must be evident the quantity consumed of the articles liable to them must have increased in the ratio of fifty per cent. per annum, the amount of the last year being five times that of the first. There is only one drawback on the satisfactory nature of this statement—a large portion of the increased consumption was in spirituous liquors! The above duties were repealed in 1802; but the arrears of them continue to occupy a place in the treasury accounts till the year 1814, when, with very little variation, they were re-enacted. Subsequently, however, in consequence of the war, additional duties were imposed by congress on spirits and other articles, and during the same session taxes were imposed on most of the articles manufactured in the United States. In 1815, the revenue derived from internal taxation amounted to more than four and a half million of dollars, and in 1816 it reached its maximum of upwards of five millions. Soon after the termination of the war, many of the duties

were either reduced or repealed, and subsequently the remainder have been dismissed from the statute book, unless the "fees on letters-patent," which amount for 1829 to 12,990 dollars, may be termed a remnant of internal taxation. It has already been intimated that the amounts which are stated in Table I., in the column of internal revenue, are only the arrears of the former imposts, which as debts due to the government, continue to be collected.

The direct taxes are those laid upon houses and lands, and upon slaves. They were first imposed in 1798, to the amount of two millions of dollars, apportioned to the several states according to the constitution. Of this sum, rather more than one third was collected in the year 1800, another third in 1801 and 1802, and a portion only of the remainder has since been collected as arrears. In 1813 a tax to the amount of three millions of dollars was imposed; and in 1815 an *annual* direct tax of six millions of dollars was enacted, which, however, was reduced to three millions of dollars by the congress of 1816, and entirely repealed in 1817. The arrears of this tax still continue to flow annually into the treasury. The whole amount levied by the four enactments was fourteen millions of dollars, and in the year 1829, 12,702,597 dollars had been received, which allowing for expenses of collection, does not leave room for many defaulters. The following statement of the rate of assessment on each occasion of the several states will be instructive, as another test of the progressive increase in value of the property of the inhabitants.

STATES.	Quotas apportioned in 1798.			Quotas apportioned in 1813.		Quotas apportioned in 1815.	
	Dolls.	Cts.	Mills.	Dolls.	Cts.	Dolls.	Cts.
New Hampshire	77,705	36	2	96,793	37	193,586	74
Massachusetts	260,435	31	2	316,270	98	632,541	96
Rhode Island	37,502	08	0	34,702	18	69,404	36
Connecticut	129,767	00	2	118,167	71	236,335	42
Vermont	46,864	18	7	98,343	71	196,687	42
New York	181,680	70	7	430,141	62	860,283	24
New Jersey	98,387	25	3	108,871	83	217,743	66
Pennsylvania	237,177	72	7	365,478	16	730,958	32
Delaware	30,430	79	2	32,046	25	64,092	50
Maryland	152,599	95	4	151,623	94	303,247	88
Virginia	345,488	66	5	369,018	44	738,036	88
Kentucky	37,643	99	7	168,928	76	337,857	52
North Carolina	193,697	96	4	220,238	28	440,476	56
Tennessee	18,806	38	3	110,086	55	220,173	10
South Carolina	112,997	73	9	151,905	48	303,810	96
Georgia	38,814	87	5	94,936	49	189,872	98
Ohio	.....	.....	.....	104,150	14	208,300	28
Louisiana	.....	.....	.....	28,295	11	56,590	22

objects of the original cession; and the proportion of each may be paid or secured directly to the others by the respective states purchasing the land. All cause of difficulty with the general government on this subject would then be removed; and no doubt can be entertained, that, by the means of stock issued by the buying states, bearing a moderate interest, and which, in consequence of the re-

imbursement of the public debt, would acquire a great value, they would be able at once to pay the amount upon advantageous terms. It may not be unreasonable also to expect, that the obligation to pay the annual interest upon the stock thus created, would diminish the motive for selling the lands at prices calculated to impair the general value of that kind of property. It is believed, moreover,

Of the various tests by which the progressive prosperity of a country may be ascertained, the extension of its internal communications is certainly not one of the least important. In this respect the progress of the United States is, perhaps, more conspicuous than in almost any other. In the year 1775, congress first established a line of posts from Falmouth, in New England, to Savannah, in Georgia: in 1782 all the surplus income derived from the postage was directed to be applied to the establishment of new post-offices, and the support of packets. In the year 1790, there were 75 post-offices, and 1,875 miles of post-roads; in the year 1810 there were 2,300 post-offices, and 36,406 miles of post-roads; and in 1829 there were 8,004 post-offices, and 115,000 miles of post-roads. The general post-office is established at Washington, under the direction of a postmaster-general, who is authorized to appoint two assistants, and the requisite number of clerks; he is further directed to superintend the business of the department in all the duties that are or may be assigned to it; and he is required, once in three months, to render to the secretary of the treasury an account of all the receipts and expenditures in the department, to be adjusted and settled as other accounts. The postmaster-general may establish post-offices, and appoint post-masters on the post-roads which are or may be authorized by law, at all such places as to him may appear expedient. He regulates the number of times the mail shall go from place to place, and he is authorized to contract for carrying the mail, and to establish post-roads.

The rates of postage are very moderate, being about half those of Great Britain. For any distance not exceeding 30 miles, six cents; 80 miles, ten cents; 150 miles, twelve cents and a half; 400 miles, eighteen cents and three quarters; above 400 miles, twenty-five cents.* Thus a letter may be conveyed from Maine to New Orleans, at least 2,000 miles, for a fraction more than one shilling sterling. Double

letters, or those composed of two pieces of paper, are charged with double the above rates, and triple and quadruple letters in the same proportion. All letters weighing one ounce avoirdupois, or more, are charged at the rate of single postage for each quarter of an ounce, or quadruple postage for each ounce, according to their weight; and no letter can be charged with more than quadruple postage, unless its weight exceeds one ounce avoirdupois. The postage on ship letters, if delivered at the office where the vessel arrives, is six cents; if conveyed by post, two cents in addition to the ordinary postage. For each newspaper† not carried out of the state in which it is published, or, if carried out of the state, not over 100 miles, one cent; over 100 miles, and out of the state in which it is published, one cent and a half. Magazines and pamphlets, if published periodically, distance not exceeding 100 miles, one cent and a half per sheet; ditto, distance over 100 miles, two cents and a half per sheet; if not published periodically, distance not exceeding 100 miles, four cents per sheet; ditto, distance over 100 miles, six cents per sheet. Small pamphlets, containing not more than a half sheet royal, are charged with half the above rates; eight pages quarto are rated as one sheet, and all other sizes in the same proportion. The number of sheets in a pamphlet sent by mail must be printed or written on one of the outer pages; when the number of sheets is not truly stated, double postage is charged. Every thing not coming under the denomination of newspapers or pamphlets is charged with letter postage.‡

Before entering on the general expenditure of the United States, it may be proper to notice the mint establishment, and the state of the circulating medium. In 1792, a mint establishment for the United States, to be carried on at the seat of government for the time being, was authorized by congress. Since the removal of the seat of government to Washington,

that the interests of the several states would be better promoted by such a disposition of the public domain, than by sales in the mode hitherto adopted; and it would at once place at the disposal of all the states of the union, upon fair terms, a fund for purposes of education and improvement, of inestimable benefit to the future prosperity of the nation."—*Finance Report, December 7, 1831*, pp. 19, 20.

* It may not be improper to remind our readers, who may not be familiar with American coins, that a cent, or the hundredth part of a dollar, is nearly equivalent to the English halfpenny.

† Newspapers are not subject to stamp or other duty in the United States.

‡ *Privilege of Franking*.—"Letters and packets to and from the following officers of the government, are by law received and conveyed by post, free of postage:—The president and vice-president of the United States; secretaries of state, treasury, war, and navy; attorney-general; postmaster-general and assistant postmaster-general; comptrollers, auditors, register, and solicitor of the treasury; treasurer; commissioner of the general land office; com-

missioners of the navy board; commissary-general; inspectors-general; quartermaster-general; paymaster-general; superintendent of patent office; speaker and clerk of the house of representatives; president and secretary of the senate; and any individual who shall have been, or may hereafter be, president of the United States; and each may receive newspapers by post free of postage.—Each member of the senate, and each member and delegate of the house of representatives, may send and receive, free of postage, newspapers, letters, and packets, weighing not more than two ounces, (in case of excess of weight, excess alone to be paid for,) and all documents printed by order of either house, during and sixty days before and after each session of congress.—Postmasters may send and receive, free of postage, letters and packets not exceeding half an ounce in weight; and they may receive one daily newspaper each, or what is equivalent thereto.—Printers of newspapers may send one paper to each and every other printer of newspapers within the United States, free of postage, under such regulations as the postmaster-general may provide."—*American Almanac*, 1832.

this establishment has, by special act of congress, been continued at Philadelphia; and very recently, a handsome and commodious new building has been provided, on such a plan as to admit of its operations being carried on to much greater extent than formerly. The gold coins of the United States are—eagles, of the value of ten dollars or units, containing 247 1-8 grains of pure, or 270 grains of standard gold; half eagles, of the value of five dollars; quarter eagles, of the value of two and a half dollars. The silver coins are—the dollar or unit, of the value of one hundred cents, containing 371 4-16 grains of pure silver, or 416 grains of standard silver; half dollar, of the value of fifty cents; quarter dollar, of the value of twenty-five cents; dime, of the value of ten cents; half dime, of the value of five cents. The copper coins are—cent, of the value of the one hundredth part of a dollar, and containing eleven penny-weights of copper; half cent, of the value of the two hundredth part of a dollar. The devices upon the coins are, upon one side, an impression emblematical of Liberty, with an inscription of the word "Liberty," and the year of the coinage; upon the reverse of the gold and silver coins, the representation of an eagle, with the inscription, "United States of America;" upon the reverse of the copper coins, an inscription expressing the denomination of the piece. The proportional value of the gold and silver in all the coins which are current in the United States, is as fifteen to one, according to quantity in weight; that is to say, every fifteen pounds weight of pure silver, are of equal value with one pound weight of pure gold. The standard of all the gold coins of the United States is eleven parts fine to one part of alloy; the alloy is composed of silver and copper in proportions not exceeding one half of silver. The standard of all the silver coins is 1,485 parts fine to 179 parts of alloy; the alloy is wholly of copper. Any person may carry gold or silver bullion to be coined at the mint; the bullion so brought is assayed and coined as speedily as possible, free of expense. As soon as the bullion has been coined, the person who deposited the same, may upon demand receive

in lieu thereof, coins of the same species of bullion weight for weight of the pure gold or pure silver therein contained. The gold and silver coins struck at the mint are a lawful tender; the value thereof is in proportion to their respective weights.

The coinage effected within the last year (1830) amounts to 3,155,620 dollars, comprising 643,105 dollars in gold coins, 2,495,400 dollars in silver, 17,115 dollars in copper, and consisting of 8,357,191 pieces of coin, viz.

		Dollars.
Half eagles	126,351 making . . .	631,755
Quarter eagles . . .	4,540 " . . .	11,350
Half dollars	4,764,800 " . . .	2,382,400
Dimes	510,000 " . . .	51,000
Half dimes	1,240,000 " . . .	62,000
Cents	1,711,500 " . . .	17,115
	8,357,191	3,155,620

Of the amount of gold coined within the last year, about 125,000 dollars were derived from Mexico, South America, and the West Indies; 19,000 dollars from Africa; 466,000 dollars from the gold regions of the United States, and about 33,000 dollars from sources not ascertained. Of the gold of the United States above mentioned, 24,000 dollars may be stated to have been received from Virginia, 204,000 dollars from North Carolina, 26,000 dollars from South Carolina, and 212,000 dollars from Georgia. In the last annual report of the director of the mint, the progressive development of the gold region of the United States was illustrated by referring to the increase of the annual receipts from North Carolina, which, previous to 1824, had been inconsiderable; but from that year to 1829, inclusive, had advanced from 5,000 dollars to 128,000 dollars, and also to the then novel occurrence of gold having been received at the mint from Virginia and South Carolina, about 2,500 dollars having been received from the former, and 3,500 dollars from the latter. The past year exhibits, in relation to all these states, a conspicuous increase in the production of gold, and presents, also, the remarkable fact of 212,000 dollars in gold received from Georgia, from which state no specimen even had been received at the mint in any previous year.*

* A late British writer gives the following account of the quantity of the precious metals produced from the American mines:—"An elaborate paper prepared in the foreign office has been laid before parliament, which decides the question as to the comparative productions of the American gold and silver mines during the last ten years, ending with 1829, and the periods immediately preceding. This return exhibits a material falling off; and although much of the diminution may, perhaps, fairly be attributed to the unsettled state of the countries in which the mines are situated, still there is abundant reason for concluding, that the source itself is approaching to exhaustion. From this curious document we make the following abstract:—From 1790 to 1809, the mines of Mexico yielded gold of the value of 4,523,378*l.*, silver, 94,429,303*l.*;

those of Panama, gold, 223,518*l.*; Chili, gold, 863,974*l.*, silver, 944,736*l.*; Buenos Ayres, gold, 1,862,955*l.*, silver, 19,286,830*l.*. From 1810 to 1821, Mexico yielded gold, 1,913,075*l.*, silver, 45,388,729*l.*; Panama, gold, 23,603*l.*; Chili, gold, 1,904,514*l.*, silver, 878,188*l.*; Buenos Ayres, gold, 2,161,940*l.*, silver, 7,895,842*l.*; Russia, gold, 3,703,743*l.*, silver, 1,502,981*l.*. The returns from Monte Video are too vague to lead to any safe results. The comparative increase or decrease in periods of ten years is as follows:—Mexico, from 1790 to 1799, and 1800 to 1809, in gold, an increase of 16 1-10th; in silver, a decrease of 2 2-5ths; on the whole, a decrease of 1 3-5ths, as compared with the first period, from 1810 to 1819, in gold, a decrease of 30; of silver, a decrease of 48 3-5ths; on the whole, a decrease of 47 4-5ths, as compared

Owing to the proportionate value of the gold and silver coins not being properly adjusted, (gold being valued at only 15 to 1 of silver, while its real value is very nearly 16 to 1,)* there is no gold coin now in circulation.†

It has been a question much agitated amongst financiers and political economists, whether the absence of the precious metals is a subject for lamentation or for congratulation. It has been affirmed by some, not without apparent reason, that as the circulating medium is only an instrument—a machine—the less the expense of its construction and maintenance, the more profit or the less loss must accrue: while it has been maintained, on the other hand, that there is no safety for commerce, unless gold, or paper immediately convertible into gold, be the circulating medium. We shall not so far forget the nature and limits of our undertaking, as to enter into this controversy, but content ourselves with stating our opinion, that, excepting the advantage of cheapness, it is a matter of indifference whether the circulating medium be of value in itself, or be the representative of value; that if it be the representative of value, it is not important whether that value be gold, or land,

or houses, or barrels of flour, provided the circulating medium by which they are represented does not represent more than their marketable or exchangeable value; and that the interests of commerce are not directly affected by the question, whether the circulating medium be real value itself, or the representative of real value, but by the amount of the circulating medium, the variations of which have a corresponding effect upon the prices of all articles of trade. There can be no doubt, that as the interests of all are affected by the increase or diminution of the currency, this point should be sufficiently under the control of the executive, to prevent or mitigate the pernicious extremes in which the avarice or indiscretion of individuals have too often resulted. The committee, however, consider that the abundance of "paper money" in the United States is an evil. "While we have so much paper money," they state, "we can not have any great quantity of the precious metals in use, as money; and while this extensive use of paper money shall continue, an adjustment of the relative value of gold and silver will not bring much gold into circulation. Still, the necessary adjustment should be made. No man can foresee how

with the first period; from 1820 to 1829, in gold, a decrease of 78 7-10ths; silver, a decrease of 56 2-5ths; on the whole, a decrease of 57 2-5ths, as compared with the first period. Panama, from 1790 to 1799, and 1800 to 1809, in gold, a decrease of 11 7-10ths, as compared with the first period; from 1810 to 1819, a decrease of 93 3-10ths; 1820 to 1829, a decrease of 86 4-5ths. Chili, from 1790 to 1799, and 1800 to 1809, in gold, an increase of 65 4-5ths; silver, a decrease of 31; on the whole, an increase of 4 3-5ths; from 1810 to 1819, in gold, an increase of 330 1-2; silver, an increase of 30 4-5ths; on the whole, an increase of 148 3-5ths; 1820 to 1829, in gold, an increase of 55 2-5ths; silver, a decrease of 81 3-10ths; on the whole, a decrease of 31 9-60ths. Buenos Ayres, from 1790 to 1799, and 1800 to 1809, in gold, an increase of 45 4-5ths; silver, a decrease of 23 4-5ths; on the whole, a decrease of 19 1-5th; from 1809 to 1819, in gold, an increase of 42 3-5ths; silver, a decrease of 51; on the whole, a decrease of 51 1-2; 1820 to 1829, in gold, an increase of 42 3-5ths; silver, a decrease of 70; on the whole, a decrease of 62 3-5ths. From 1820 to 1829, Russia produced, in gold, 3,703,743½, in silver, 1,502,981½. On the produce of the whole of these mines, therefore, from 1790 to 1799, and from 1800 to 1809, there has been, as compared with the first period, in gold, an increase of 26 4-5ths; silver, a decrease of 6 3-5ths; on the whole, a decrease of 4 4-5ths; from 1810 to 1819, in gold, an increase of 20 2-5ths; silver, a decrease of 49 1-2; on the whole, a decrease of 45 4-5ths; and from 1820 to 1829, in gold, an increase of 74 3-5ths; silver, a decrease of 56 3-5ths; and on the whole, a decrease of 49 7-10ths."

* "The relative value of gold and silver in our coins should be 15.9 to 1. In France, the relative value of gold to silver is about 15.82 to 1. In Great Britain, gold is in value to silver about as 15.86 to 1. The relative value of gold and silver in Spain has been 16 to 1 during the last fifty or sixty years, and, according to recent information, the value of gold in Spain is now a little higher than this proportion. In Portugal, the rise of gold and the decline of silver in relative value were slower and later than in Spain; but the relative value of the two metals in Portugal is now about 16 to 1, and this proportion appears to have prevailed there for many years. From all the information which can be obtained, it appears that the value of gold in relation to silver, is about 16 to 1

in all the American countries south of the United States. This relative value seems to have prevailed in those parts of America which were formerly Spanish, and especially in Mexico and Peru, during the last forty or fifty years. In Brazil, gold was for a long time somewhat less valuable, but during the last ten years, the relative value of gold in Brazil has also been about 16 to 1. In the West Indies, the two metals fluctuate much in respect to each other; but the ratio 16 to 1 seems to be the average of relative value."—*Report of the Select Committee appointed to consider the state of the Current Coin, &c., presented to the Senate, 15th of December, 1830.*

† "The fact that we have no gold coins in use, is not the intended effect of our institutions. It has resulted from too low a valuation of gold in respect to silver, when our system was established, and a progressive rise in the relative value of gold since that time. By our system, the two metals are coined upon the basis that one pound of gold is equal in value to fifteen pounds of silver, and all our coinage of the two metals has been executed in conformity to this relative valuation. This proportion was too low a valuation of gold in the year 1792, and it is certainly much too low a valuation of gold in relation to silver at this time. Our gold coins being much underrated in respect to silver, have never had any general circulation in the country; they have ceased to be used as money; they are merely merchandize, purchased by a considerable premium over silver, and they are used in manufactures, or exported to Europe. Our public coinage of gold is now wholly without any public benefit: we prohibit and punish all private coinage of gold; we coin this metal at the mint upon a principle which does not permit it to circulate as money, and we pay the expense of this useless coinage. In practice, this coinage affords a facility to the possessor of gold bullion, since it enables him to employ the mint to weigh and assay his bullion, and to divide it into very convenient portions, without expense to himself. When the coins are received from the mint they are sold for their value as bullion; some of them are used in manufactures, and the greater part are exported. If we will not rectify the legal proportion between the coins of the two metals, we ought to abolish the coinage of gold, save a useless expense, and leave gold to be treated like other metals not coined as money."—*Report of the Select Committee, 1830.*

far the present course of issuing paper will proceed, or how long paper money, in its present form and abundance, will be tolerated. Whatever may happen in respect to paper money, the precious metals should always be coined, and a sound system of coins should be in constant operation, to the end that whether paper money shall be used or not, and whether the amount of our coins shall be great or small, a portion of them may consist of gold, and another portion of silver.*

It appears from the testimony of the select committee, that the coins now in the United States, and the bank notes now circulating as money, are estimated at about one hundred millions of dollars. The coin is estimated at about twenty-three millions of dollars; of which sum, it is conceived, that about fifteen millions of dollars are held by the banks, and

about eight millions of dollars are in circulation among the people. The bank notes in circulation are estimated at about seventy-seven millions of dollars. The amount of money in circulation among the people is, accordingly, about eighty-five millions of dollars, consisting of about seventy-seven millions of bank notes, and about eight millions of coin. The banks in the principal sea-ports have at this time an unusual quantity of coin; and the amount of coin now held by those banks is much greater than the sum which they have generally held. Of the sum of seventy-seven millions of dollars of bank notes in circulation, it is estimated that about one half consists of notes for sums exceeding five dollars, about one fourth of notes for five dollars, and about one fourth of notes for sums less than five dollars. The notes for sums less than five dollars are chiefly for one dol-

* Very recently, so late as in June, 1834, three several bills were passed by the government of the United States, relative to the gold and silver currency of the country. These several acts altering and regulating the value of gold and silver coins, foreign and domestic, are as follows: they have too important a bearing not to be here inserted.

An Act concerning the gold coins of the United States, and for other purposes.—Be it enacted by the senate and house of representatives of the United States of America, in congress assembled, That the gold coins of the United States shall contain the following quantities of metal, that is to say: each eagle shall contain two hundred and thirty-two grains of pure gold, and two hundred and fifty-eight grains of standard gold; each half eagle one hundred and sixteen grains of pure gold, and one hundred and twenty-nine grains of standard gold; each quarter eagle shall contain fifty-eight grains of pure gold, and sixty-four and a half grains of standard gold. Every such eagle shall be of the value of ten dollars; every such half eagle shall be of the value of five dollars; and every such quarter eagle shall be of the value of two dollars and fifty cents. And the said gold coins shall be receivable in all payments, when of full weight, according to their respective values; and when of less than full weight, at less values, proportioned to their respective actual weights.

Sec. 2. And be it further enacted, That all standard gold or silver deposited for coinage after the thirtieth day of June next, shall be paid for in coin under the secretary of the treasury, within five days from the making of such deposit, deducting from the amount of said deposit of gold and silver one half of one per centum. Provided, That no deduction shall be made unless said advance be required by such depositor within forty days.

Sec. 3. And be it further enacted, That all gold coins of the United States minted anterior to the thirty-first day of July next, shall be receivable in all payments at the rate of ninety-four and eight tenths of a cent per pennyweight.

Sec. 4. And be it further enacted, That the better to secure a conformity of the said gold coins to their respective standards as aforesaid, from every separate mass of standard gold which shall be made into coins at the said mint, there shall be taken, set apart by the treasurer, and reserved in his custody, a certain number of pieces, not less than three, and that once in every year the pieces so set apart and reserved shall be assayed under the inspection of the officers, and at the time, and in the manner now provided by law; and if it shall be found that the gold so assayed shall not be inferior to the said standard hereinbefore declared, more than one part in three hundred and eighty-four in fineness, and one part in five hundred in weight, the officer or officers of the said mint whom it may concern, shall be held excusable; but if any greater inferiority shall appear, it shall be certified to the president of the United States, and if he shall so decide, the said officer or officers shall be

thereafter disqualified to hold their respective offices: Provided, That, in making any delivery of coin at the mint in payment of a deposit, the weight whereof shall be found defective, the officer concerned shall be responsible to the owner for the full weight, if claimed at the time of delivery.

Sec. 5. And be it further enacted, That this act shall be in force from and after the thirty-first day of July, in the year of one thousand eight hundred and thirty-four.

An Act relating to the value of certain foreign gold coins within the United States.—Be it enacted by the senate and house of representatives of the United States of America, in congress assembled, That from and after the thirty-first day of July next, the following gold coins shall pass current as money within the United States, and be receivable in all payments by weight, for the payment of all debts and demands, at the rates following, that is to say: the gold coins of Great Britain, Portugal, and Brazil, of not less than twenty-two carats fine, at the rate of ninety-four cents and eight tenths of a cent per pennyweight; the gold coins of France, nine tenths fine, at the rate of ninety-three cents and one tenth of a cent per pennyweight; and the gold coins of Spain, Mexico, and Colombia, of the fineness of twenty carats, three grains and seven sixteenths of a grain, at the rate of eighty-nine cents and nine tenths of a cent per pennyweight.

Sec. 2. And be it further enacted, That it shall be the duty of the secretary of the treasury to cause assays of the aforesaid gold coins, made current by this act, to be had at the mint of the United States, at least once in every year, and to make a report of the result thereof to congress.

An Act regulating the value of certain foreign silver coins within the United States.—Be it enacted by the senate and house of representatives of the United States of America, in congress assembled, That from and after the passage of this act, the following silver coins shall be of the legal value, and shall pass current as money within the United States, by tale, for the payment of all debts and demands, at the rate of one hundred cents the dollar; that is to say: the dollars of Mexico, Peru, Chili, and Central America, of not less weight than four hundred and fifteen grains each; and those restamped at Brazil, of the like weight, of not less fineness than ten ounces fifteen pennyweights pure silver in the Troy pound of twelve ounces of standard silver; and the five franc pieces of France, when of not less fineness than ten ounces and sixteen pennyweights in twelve ounces Troy weight of standard silver, and weighing not less than three hundred and eighty-four grains each, at the rate of ninety-three cents each.

Sec. 2. And be it further enacted, That it shall be the duty of the secretary of the treasury to cause assays of the aforesaid silver coins made current by this act, to be had at the mint of the United States, at least once in every year, and to make report of the result thereof to congress.

lar, two dollars, and three dollars; and a great portion of them consists of notes for one dollar.

The power to establish banks is claimed and exercised by the government of the United States, and also by each of the states. There are now in the United States about five hundred incorporated banks, and the number is annually increased. The public revenue of the United States, and of every one of the states, is collected and disbursed almost wholly in bank notes. The coin held by the banks, and in circulation among the people, is silver. All the coin in common circulation, and most of that held by the banks, is half dollars and the minor silver pieces.

It will have been perceived, that the subject of coinage is eventually interwoven with that of the use of bank notes. Before we leave this subject, therefore, we shall notice the bank of the United States—an institution, the existence of which, on constitutional grounds, forms the subject of considerable discussion in the republic at this time.* The old bank of the United States was incorporated by an act of congress, approved in February, 1791. By the limitation of the charter, it was to expire on the 4th of March, 1811. This, like the banks of England and France, was a bank of deposit, discount, and circulation, with a capital of 10,000,000 dollars. Those European writers, both British and French, who have eulogized this institution as being purely commercial, and distinguished from those of England and France by not being connected with the government, or an engine of finance, cannot have read the charter, the preamble to which begins thus: "Whereas the establishment of a bank will be very conducive to the conducting of the national finances, will tend to give facility to the obtaining of loans for the use of the government in sudden emergencies, and will be productive of considerable advantages to trade and industry in general," &c. Instead of being a merely commercial establishment, therefore, it was, essentially and mainly, of a financial and political character, and it was on this ground that its constitutional character was defended; the right of congress to grant such a charter being claimed mostly upon the strength of that clause of the constitution, which gives to congress the authority necessary for carrying into execution the powers enumerated, and expressly vested in that body. The origin of this establishment was, therefore, similar to that of the bank of England, and the resemblance is not limited to the general purposes of

its institution; for, as the bank of England originated in a loan to the British government, so the act by which the old bank of the United States was chartered, provided that the sums subscribed by individuals and corporations should be "payable, one fourth in gold and silver, and three fourths in the public debt" certificates. The president of the United States was authorized to subscribe for two millions of the stock in behalf of the United States. The directors, being twenty-five, were chosen by the stockholders, without any interference on the part of the government in the election; but the government reserved the right of inspecting the affairs of the bank, and, for this purpose, the secretary of the treasury was authorized to demand of the president and directors a statement of its concerns as often as he might see fit. The corporation was authorized to establish branches in any part of the United States. The only restriction, as to circulation, was, that the amount of debts due from the corporation by bond, bill, note, or otherwise, besides the debts due for deposits, should never exceed 10,000,000 dollars; and, in case of excess, the directors, by whose agency such debt should be incurred, were made personally answerable. This bank went into operation, and had a most powerful agency in establishing the credit of the government, facilitating its financial operations, and promoting the interests of industry and commerce. Congress having refused to renew the charter, it expired by its own limitation, in 1811.

During the war, however, the want of a national bank was severely felt, not only as an agent for collecting the revenues, but more especially for transmitting funds from one part of the country to another; and then it might have been a useful auxiliary to public credit, by supplying temporary loans in cases of emergency. So thoroughly convinced were the public of the necessity of such an institution, that the members of the same political party by which the constitutional objections had been made to the old bank, and which had refused to renew its charter, passed an act of congress, which was approved by the president April 10, 1816, chartering the present bank of the United States, with a capital of 35,000,000 dollars, upon principles, and with provisions, very similar to those contained in the former charter. For this charter the government demanded and received a bonus of 1,500,000 dollars from the stockholders. The government became a stockholder in the same

* For this statement respecting the United States bank, we with pleasure acknowledge our obligations to that ably conducted work, the *Encyclopædia Americana*. Although we have read much in various American publications upon the subject the statements of

the editors appeared to us so correct, and their views so just, that we found it unnecessary to do more than to add the state of the bank at a period somewhat later than that work contains.

proportion as in the former bank, taking one fifth, or 7,000,000 dollars of the stock. The direction of the institution was left to the stockholders, as in the old bank, except that the government reserved the right of appointment and removal at pleasure, by the president, of five directors out of the twenty-five, the other twenty being elected by the stockholders. The government also reserved the right to demand a statement of the concerns of the institution by committees of either branch of the legislature. One quarter of the subscriptions to the stock were payable either in gold and silver, or United States stock, at the option of subscribers. The seven millions to be subscribed by the government was payable either in gold and silver or public stock, at an interest of five per cent., at the option of the government. The transactions of the corporation were limited to making loans and trading in the precious metals, and the sale of such goods or proceeds of such lands as should be pledged. Branches may be established in any parts of the United States or their territories. No other similar corporations are to be chartered by the government, except banks in the district of Columbia, with a capital, in the whole, not exceeding 6,000,000 dollars, during the period for which the charter was granted, namely, to the 3d of March, 1836. The bank is prohibited from purchasing any part of the public debt, taking interest above six per cent., or lending to the government more than 500,000 dollars, or to any state more than 50,000 : and the debts of the institution are in no case to exceed the amount of deposits by more than 35,000,000 dollars. In case of refusing payment of its notes or deposits in specie, the bank is make liable to pay interest at the rate of twelve per cent. per annum. The bank is also obliged, by its charter, to give the government the necessary facilities for transferring the public funds from place to place within the United States, without charging commissions, or claiming any allowance on account of the difference of exchange, and to transact all the business of commissioners of loans whenever required so to do. The bank is prohibited from issuing bills under the denomination of five dollars.

It is an object proposed by the charter, as appears from some of the provisions already noticed, to make the institution independent of the fortunes, and place it beyond the exigencies, of the government, by limiting the amount of loans that may be made to the government, and prohibiting the purchase of the

public debt. It is not in the power of congress to exonerate the bank from the liability to pay, in specie, its deposits made, or notes put into circulation, previously to the passing of any act for that purpose ; so that the depositors and holders of its notes are entirely secure from any interposition of the government between themselves and the bank, in violation of the contract held by them. The institution is thus essentially commercial in its character, being directly auxiliary to the government, and subject to its control, only as a financial engine. It has had an important influence upon the industry and commerce of the country and the credit of the government, and has been of immense utility in the management of its finances. But its greatest and most beneficial influence has been felt in the restoration of the currency to a sound state ; for, at the time of its going into operation, many of the state banks had an immense amount of unredeemable paper in circulation, purporting, it is true, to be payable to the bearer in specie, on presentment for that purpose, but which was not, in fact, so paid. Immediately on the bank of the United States going into operation, with its various branches in the principal commercial cities, it became necessary for all the other banks within the circle of its influence to resume specie payments, or discontinue their operations. Those which had not resources to resume specie payments necessarily stopped ; and the consequence of the influence of this institution is a complete restoration of the currency to specie, or its equivalent. In fine, whether we consider the extent of the capital of the institution, that of its operation, or its commercial and financial utility and influence, it may justly be considered the second institution of the kind in the world, ranking, in all these respects, next after that of England. The stock was made the subject of speculation soon after its establishment, and rose, at one time, to the enormous advance of fifty-six per cent. upon the original subscription ; but the great losses incurred by some of the branches, especially those of the new states, and other causes, subsequently reduced it to ten per cent. discount on its original value. It has since risen to a more steady market-value of from twenty to twenty-five per cent. advance. The amount of the circulation for 1828 was between 12,000,000 and 13,000,000 dollars. The deposits for the same year averaged from 13,000,000 to 14,000,000. The dividends have varied from five to six per cent.* Be-

* The present secretary of the treasury, Mr. McLane, in his Finance Report for 1831, judiciously observes,—“ The indispensable necessity of such an institution for the fiscal operations of the government, in all its departments, for the regulation and preservation of a sound currency, for the aid of commercial transactions

generally, and even for the safety and utility of the local banks, is not doubted, and, as is believed, has been shown in the past experience of the government, and in the general accommodation and operations of the present bank. The present institution may, indeed be considered as peculiarly the offspring of that necessity,

'des the principal bank, there were in January, 1830, twenty-two offices of discount; namely, at Portland, Portsmouth, Boston, Providence, Hartford, New York, Buffalo, Pittsburgh, Baltimore, Washington, Richmond, Norfolk, Fayetteville, Charleston, Savannah, Mobile, New Orleans, Nashville, Lexington, Louisville, Cincinnati, and St. Louis. The state of the bank, April 1, 1830, was as follows:—

	Dollars.	Cents.
Notes discounted	32,138,270	89
Domestic bills discounted	10,506,882	54
Funded debt held by the bank	11,122,530	90
Real estate	2,891,890	75
Funds in Europe, equal to specie	2,789,498	54
Specie	9,043,748	97
Public deposits	8,905,501	87
Private deposits	7,704,256	87
Circulation	16,083,894	00

The expenditure of the United States is divided into four departments: the civil list, which includes the salaries paid to all the political, judicial, and diplomatic functionaries of the general government, both at home and abroad, as well as a large amount for miscellaneous items; the military establishment, including Indian affairs and internal improvements; the naval establishment; and the public debt. The last of them is an item which will probably not appear in any finance report after the present, or, at any rate, the following year. At the close of this chapter we have given a detailed statement of the expenditure of the United States for the year 1829, extracted from the appendix of the Finance Report for that year. It speaks volumes in favour of the government from which it issues. Here are no attempts at concealment—no appropriations obtained for one object and devoted to another—but a simplicity of statement worthy of the utility of the objects to which the revenue is devoted; indeed, the statement is so

springing from the inconveniences which followed the first loss of the bank of the United States, and the evils and distresses incident to the excessive, and, in some instances, fraudulent issues of the local banks during the war. The propriety of continuing it is to be considered not more in reference to the expediency of banking generally, than in regard to the actual state of things, and to the multiplicity of state banks already in existence, and which can neither be displaced, nor in other manner controlled, in their issues of paper, by the general government. This is an evil not to be submitted to; and the remedy at present applied, while it preserves a sound currency for the country at large, promotes the real interests of the local banks, by giving soundness to their paper. If the necessity of a banking institution be conceded or shown, that which shall judiciously combine the power of the government with private enterprise, is believed to be most efficacious. The government would thus obtain the benefit of individual sagacity in the general management of the bank; and, by means of its deposits and share in the direction, possess the necessary power for the prevention of abuse.

"It is not intended to assert that the bank of the United States, as at present organized, is perfect, or, that the essential objects of such an institution might not be attained by means of an entirely

clear and satisfactory, that any American who can read can not fail to apprehend the manner in which its funds are appropriated.

Having put our readers in possession of this document, it will be only necessary for us to make some general observations on the principal items in each department of the expenditure. The whole amount of the civil list for the year 1829, including miscellaneous and foreign intercourse, was 3,101,514 dollars; of this sum 1,327,069 only belong properly to the civil list, the remainder belonging to the miscellaneous (1,566,679) and to the diplomatic departments (207,765;) and even then the civil list is charged with disbursements which are not connected with it in other countries, the legislature receiving 467,447, the judiciary 239,447, and the governments of the territories 55,344, besides several other items; leaving for the whole executive department only 530,172 dollars, or little more than 100,000*l.* sterling. The first item in the disbursements is the salary of the president, 25,000 dollars, about 5,000*l.* sterling. The vice-president has only one fifth of that sum; the secretaries of state, of the treasury, of war, of the navy, and the postmaster-general, receive 6,000 dollars annually; the attorney-general 3,500; the chief clerks to each of the secretaries 2,000. In the treasury department the comptroller receives 3,500; and the second comptroller 3,000; five auditors, the treasurer, and registrar, 3,000 each; the solicitor to the treasury 3,500; and the commissioner of the land office 3,000. In the judiciary, the chief justice of the supreme court of the United States receives 5,000 annually; and six associate justices 4,500. In the foreign intercourse, nearly half the amount of the disbursement is for expenses of treaties and other contingencies. The plenipotentiaries at foreign courts receive only 9,000 dollars per annum,

new one, organized upon proper principles, and with salutary limitations. It must be admitted, however, that the good management of the present bank, the accommodation it has given the government, and the practical benefits it has rendered the community—whether it may or may not have accomplished all that was expected from it—and the advantages of its present condition, are circumstances in its favour entitled to great weight, and give it strong claims upon the consideration of congress in any future legislation upon the subject. To these may be added, the knowledge the present bank has acquired of the business and wants of the various portions of this extensive country, which, being the result of time and experience, is an advantage it must necessarily possess over any new institution. It is to be observed, however, that the facilities of capital actually afforded by the present institution to the agricultural, commercial, and manufacturing industry of all parts of the union, could not be withdrawn, even by transferring them to another institution, without a severe shock to each of those interests, and to the relations of society generally. To similar considerations, it may be presumed, is to be traced the uniform policy of the several states of the union, to rechartering their local institutions, with such modifications as experience may have dictated, in preference to creating new ones."—Pp. 14—16.

besides 9,000 for an outfit; a charge d'affaires receives a salary of 4,500; and a secretary of legation 2,000. There are employed six plenipotentiaries, with a secretary of legation attached to them, and ten charge d'affaires. We apprehend that our readers on both sides of the Atlantic will concur in the observations of Mr. McLane on the amount of remuneration received by the ministers to foreign courts; and many will probably be inclined to extend the principle to other officers of the republic. "The salaries of the public ministers abroad," observes Mr. M. "must be acknowledged to be utterly inadequate, either to the dignity of the office, or the necessary comforts of their families. At some foreign courts, and those whose relations towards the United States are the most important, the expenses incident to the station are found so burdensome as only to be met by the private resources of the minister. The tendency of this is to throw those high trusts altogether into the hands of the rich, which is certainly not according to the genius of our system. Such a provision for public ministers as would obviate those evils, and enable the minister to perform the common duties of hospitality to his countrymen, and promote social intercourse between the citizens of both nations, would not only elevate the character of his country, but essentially improve its public relations."*

Among the miscellaneous items are the mint establishment, 85,931 dollars; the lighthouse establishment, 289,149; surveys of public lands, 51,289; marine and navy hospitals, 188,562; public buildings at Washington, 74,114; shares in several canal companies, 468,500; and revolutionary claims, 288,446. It is impossible to close this brief account of the civil list of the United States without expressing a sincere admiration of the purposes to which its funds are devoted. Not only is the catalogue of its expenditure free from those corruptions which either are too gross to be clearly expressed, or if stated fill the mind with a just indignation; but it is to us surprising how large a portion of the funds are made directly to bear on the welfare of the people themselves, either in the shape of internal improvement, (which, while it promotes commercial advantage, by facilitating the communications between the sea-ports and the states of the interior, confers scarcely a less benefit in the well remunerated occupation it affords to the labourer,) or of hospitals, or light-houses, or other similar objects; while the amount paid in salaries to a few individuals cannot possibly

be deemed either burdensome to the nation, or corrupting to the possessors of office.

The amount under the head Military Establishment (6,267,626 dollars,) is nearly half the gross sum expended by the government, exclusive of that devoted to the liquidation of the public debt; but a very large proportion of it is applied to purposes, either not at all, or very indirectly, connected with military affairs. The amount for pay, subsistence, clothing, medicines, recruiting, and contingencies, is little more than two millions of dollars. This amount is found sufficient to keep on foot an army of 6,000 men, to which the peace establishment was reduced (from 10,000) in 1821. The force consists of the general staff, 119; comprising, medical department, pay and purchasing departments, a corps of military and a corps of topographical engineers: four regiments of artillery, consisting of 545 officers and men, the supernumeraries amounting to 2,240; and seven regiments of infantry, consisting of 547 officers and privates, amounting to 3,829; total organized force, 6,188.* In the armouries, arsenals, and ordnance, armament of fortifications, and arming and equipping the militia, there were disbursed, in 1830, nearly one million of dollars; and in the construction of fortifications, and in the erection of barracks, were expended about 800,000 dollars. The military academy at West Point, an interesting and important institution, an account of which will appear in a subsequent section of the work, requires nearly 28,000 dollars annually: and this closes the list of expenses strictly military, making the whole, 3,800,000 dollars. The remaining two and a half millions are expended in the erection of breakwaters, and other improvements of harbours; in deepening and improving the navigation of the Mississippi, Ohio, and about thirty other rivers or harbours; and in the construction or repair of the Cumberland, and twelve other lines of road. The pensions for soldiers who devoted their lives and fortunes to the great cause of the revolution, amount to 764,492 dollars; it must therefore be admitted, even by the most bitter opponents of republicanism, that it has improved since the days of the splendid barbarians of Sparta and of Athens, whose ingratitude to their most devoted patriots has ever been a reproach, which the conduct of the modern Greeks has tended to confirm rather than to remove. With the exception of a few miscellaneous items of little importance, the remainder is disbursed in the department of Indian affairs; the annuity to Indians, in the fulfilment of treaties for the payment of lands

* Finance Report for 1831, p. 18.

† American National Calendar for 1830.

the title of which has been conveyed by the several tribes to the United States, amounting, for the year 1829, to 245,108 dollars, and various other payments, among which we find one, and one only, for "schools" for an Indian tribe, making the sum total half a million of dollars. Before taking leave of the details of the expenditure in the military department, it may not be improper to suggest to those who may feel desirous to ascertain the present defensive power of the United States, in comparison with that of 1814, that it will amply repay their attention, if they will note on a map the points in fortifying which the government are annually expending a large sum. We are the more induced to make this observation, from a conviction that a compliance with it will tend to promote the growth of that just respect which is the true basis of political friendship between nations, and which some of the leading literary publications of the day have so pertinaciously laboured to prevent or to destroy.

The navy has always been a favourite object in the United States, as in Great Britain; and, from the flourishing state of the revenue, it will probably receive increased support. The amount disbursed annually in the navy establishment is about three and a quarter millions of dollars, of which a considerable portion is devoted to its gradual improvement, by the accumulation of stores, the erection of dry docks, and the building of additional vessels. In 1830, the United States navy consisted of seven sail of the line, all of which were laid up in ordinary; seven frigates of the first class, of which three were in ordinary, and four in commission; three frigates of the second class, of which one was a receiving ship, one in actual service, and one in ordinary; fifteen sloops, of which two were in ordinary, and the remainder on different foreign stations; seven schooners, of which three were in employ as receiving ships, one in ordinary, and two in commission. There were also five ships of the line and seven frigates in such a state of forwardness, that they could be ready for sea in from three to six months. There are seven navy yards maintained by the government in different states of the Union, for an account of which we must refer to the topography of the states in which they are located. Although we are compelled, by the limits of our undertaking, to condense our information as much as possible, there are some passages in the report of the secretary of the navy, recently presented to congress, indicative of the progress of this department, too interesting to be omitted. "The construction of the two dry docks," says the secretary, Mr. Woodbury, "has advanced with great rapidity

during the past year. Both are now mostly completed, except the removal of the coffer dams, and the finishing of some of the gates and steam machinery. They present to the eye specimens of stone masonry seldom rivalled in beauty and solidity. The expenditures on each have been about 500,000 dollars; and by the 4th of next July, it is hoped, that some of the public vessels requiring repairs may be safely docked in these useful, economical, and splendid conveniences for our naval establishment. The buildings for accommodation to the officers of yards reported in the surveys and plans of A. D. 1828, are in progress where most needed, and, in connexion with the storehouses, sheds, wharfs, walls, and shipways, require, annually, such appropriations as can be expended without a neglect of more urgent duties.—An increased estimate, to advance all these improvements, is presented for the ensuing year. Among other contemplated improvements in those plans, were ropewalks at some of our present yards. All observation and experience in the navy show, that in nothing does it suffer more at this time than from bad cordage. The impositions in the quality of the hemp, in the manufacture, and in the tar, are numerous, and difficult of detection, productive of injurious delays when detected, and when not detected, exceedingly hazardous to the safety of both crews and vessels.—The vessels in ordinary have been at most of the yards, covered, so as to shelter them effectually from sunshine and storms, and to render their security from decay much greater than heretofore. It is a gratifying circumstance, that most of those vessels, as well as those upon the stocks, are in a condition highly creditable to the persons who planned and executed the present mode of preserving them; and that, by proper care in future, until put in commission, no probability whatever exists of much further decay in the important portions of their expensive works, or of any decay in those portions composed of the invaluable material of live oak. The whole purchases of timber and stores, under the act for the gradual increase of the navy, and which remain in deposit at the yards, are over a million and a half in value. The amount of purchases, under the act for the gradual improvement of the navy, in deposit, is nearly half a million. The amount of property on hand for repairs is almost a million. The ordnance, provisions, &c. amount to upwards of a million and a half more."—It is most sincerely to be wished, that the vigorous attention which the government of the United States devote to the subject of their naval power, may not only tend to secure and perpetuate their peaceful relations with foreign powers, but to

moderate the notions of a few overheated individuals, who would apparently rather make an effort to dissolve their connexion with the Union, than acquiesce in an arrangement which, while certainly beneficial to a very large portion of the republic, is very slightly, if at all, injurious to themselves.

If satisfaction has been felt in the management of the funds of the several departments already noticed, who can withhold the meed of praise and congratulation when the state of the public debt of the republic is developed? The Table No. IV., at the close of this chapter, exhibits operations of finance such as, we believe it may be safely asserted, no nation has ever before achieved. On some points, indeed, it has been a subject of dispute, whether the example of America has been beneficial or injurious; but surely all must concur in the opinion, that in being the first nation to annihilate her national debt, not by any "equitable adjustment," nor by following the example of the "beloved" Ferdinand, but by the legitimate mode of direct payment, the nation is placing a laurel on her brow that will wear its greenness when the trophies of mere military prowess are faded and turned to dust. In 1817, owing to the war with Great Britain, the public debt of the United States amounted to nearly one hundred and sixteen millions of dollars, or about twenty-five millions sterling. In comparison with our own debt, indeed, this may appear trifling; but when the circumstances and resources of the two countries are considered, the Americans may well be excused for deeming it large and oppressive. During twelve years it was reduced to fifty-eight millions of dollars, which was the amount when General Jackson ascended the presidential chair. Fortunate in his military career, the general seems not to be forsaken in his political course; but appears likely to render his administration celebrated, by accomplishing the entire liquidation of the public debt before the expiration of his presidency. During the first three years of his administration, the amount has been reduced from 58,362,138 to 24,322,235 dollars. The whole of this amount, the secretary, in accordance with "the views of the president," proposes to liquidate before the 3d of March, 1833. "The occasion," observes Mr. M^r Lane, "is deemed a propitious one to bring before the legislature the subject of the debt, with a view to its redemption, at a period not only earlier than has been heretofore anticipated, but before the termination of the present congress.

"The entire public debt on the 2d of January next, as has been already shown, will amount to . . . 24,322,235 18

	Dolls.	Cts
The amount of the receipts into the treasury during the year 1832, after satisfying all the demands of the year, other than on account of the public debt, are estimated, as above, at	16,734,797	84
To this may be added the balance in the treasury on the 1st of January, 1832, (exclusive of the ineffective funds and the Danish indemnity,) at	1,208,276	24
From this aggregate of	17,943,074	08
After deducting the amount of the unsatisfied appropriations already estimated at	3,423,525	87
There will remain a surplus in the year 1832, of Which, unless congress should enlarge the appropriations for other objects, may be applied to the public debt.	14,519,548	21
The interest on the debt during the year 1832, may be estimated at	500,000	00
Leaving for the principal in that year	14,019,548	21
Which, being applied to that object, will leave the total amount of the public debt at the close of the year 1832, at	10,302,686	97
The government, however, has other means, which, if congress see proper, may be applied towards the payment of the debt, viz. the shares in the bank of the United States, amounting at par to 7,000,000 dollars; but which, as will be presently explained, may be estimated at not less than	8,000,000	00
In that event, the amount of the debt on the 1st of January, 1833, would be but	2,302,686	97
Which sum, together with a fair allowance for the cost of purchasing, at the market price, the stocks not redeemable in the course of the proposed operation, might be supplied in the months of January and February, 1833, by the application from the revenues of that year of a sum equal to two twelfths of the amount applied from the ordinary revenues to the debt of the year 1832, say	2,503,258	02

"It may be further observed, that should any diminution take place in the estimated revenue, or should the expenditure exceed the estimated amount, the deficiency which either event might produce in the means of the treasury applicable to the debt, would be supplied by the amount reserved in this estimate for the unsatisfied balances of appropriations; for, although that sum constitutes a legal charge on the treasury, to be met as occasion requires, yet, in any estimate of present means, it may be considered rather as a nominal than a real charge. It will be thus perceived, that the government has the means, if properly employed, of reimbursing the whole of the public debt, by purchase, or otherwise, on or before the 3d of March, 1833. The moral influence which such an example would necessarily produce throughout the world, in removing apprehension, and inspiring new confidence in our free institutions, can not be questioned. Seventeen years ago, our country emerged from an expensive war encumbered with a

debt of more than one hundred and twenty-seven millions, and in a comparatively defenceless state. In this short period it has promptly repealed all the direct and internal taxes which were imposed during the war, relying mainly upon revenue derived from imports and sales of the public domain. From these sources, besides providing for the general expenditure, the frontier has been extensively fortified, the naval and maritime resources strengthened, and part of the debt of gratitude to the survivors of the revolutionary war discharged. We have, moreover, contributed a large share to the general improvement; added to the extent of the union, by the purchase of the valuable territory of Florida; and, finally, acquired the means of extinguishing the heavy debt incurred in sustaining the late war, and all that remains of the debt of the revolution.”*

We most cordially congratulate the government and the people of the United States on the happy prospect of being free from the incubus which weighs down the energies of other nations; and most sincerely hope that the novel and extraordinary difficulty which has come upon them, of having to dispose of, or to reduce, a revenue nearly twice the amount of the expenditure, may not be attended with any of the injurious consequences arising from party violence and internal dissensions, that present circumstances appear to indicate. As the subject connects itself directly with a question of the utmost importance to the interests of commerce and of manufactures on both sides of the Atlantic, it will be desirable for our readers to be put in possession of the views of the present administration, although it is by no means certain that they may ultimately prove to be in accordance with those of the legislature. “Whatever room there may be,” says the secretary of the treasury, “for diversity of opinion with respect to the expediency of distributing among the several states any surplus revenue that may casually accrue, it is not doubted that any scheme for encouraging a surplus for distribution, or for any purpose which should make it necessary, will be generally discountenanced. There is too much reason to apprehend that a regular, uniform dependence of the state governments upon the revenue of the general government, or an uniform expectation from the same source, would create too great an incentive to high and unequal duties, and not merely disturb the harmony of the union, but ultimately undermine and subvert the purity and independence of the state sovereignties.

“To distribute the duties in such a manner, as far as that may be practicable, as to encourage and protect the labour of the people of the United States from the advantages of superior skill and capital, and the rival preferences of foreign countries,—to cherish and preserve those manufactures which have grown up under our own legislation, which contribute to the national wealth, and are essential to our independence and safety, to the defence of the country, the supply of its necessary wants, and to the general prosperity,—is considered to be an indispensable duty. The vast amount of property employed in the northern, western, and middle portion of the union, upon the faith of our own system of laws, and in which the interests of every branch of our industry are involved, could not be immediately abandoned without the most ruinous consequences. The various opinions by which the people of the United States are divided upon this subject, concern the peace and the harmony of the country, and recommend an adjustment on practical principles, rather than with reference to any abstract doctrines of political economy. The objects more particularly requiring the aid of the existing duties, upon the principles of this report, are believed to be wool, woollens, cotton, iron, hemp, and sugar, as comprehending those articles in which the agricultural and manufacturing industry are more particularly interested. Upon these articles, the average duty collected in the years 1829 and 1830, amounted to 8,940,593 dollars. These duties could not be materially changed at present, without the effect already deprecated. No objection is perceived, however, to such gradual reduction of them in future as may withdraw the aid thus afforded, as the growth and stability of our manufactures will enable them to dispense with it, to such a degree at least, as will, with the aid of an increase of population, and the means of consumption, still leave a revenue adequate to the expenditures; or until what may be withdrawn from them may be levied on other articles which may be found to admit of it. The additional sum, which, together with the amount of those duties, it may be necessary for congress to provide, in a re-adjustment of the tariff, will depend upon its decision as to confining the expenditures to the present objects, or of enlarging them, as herein suggested. In the former case, the sum of 4,559,607 dollars,—and in the latter, the sum of 6,059,607 dollars, will be required; and, in regard to either estimate, the provision should be upon a scale sufficiently liberal to guard against the chance of a deficiency. In providing for either sum, the duties may be advantageously retained upon ar-

* Finance Report for 1831, pp. 9—11.

ticles of luxury, or those which are principally consumed by the wealthier classes, or upon those not abundantly produced in the United States, in preference to others. At the same time, the duties may be removed from such raw materials as will admit of it without detriment to our agriculture; whereby the manufacturers would be enabled to sell cheaper, and also, the sooner to dispense with a part of the duties which may be at present retained for their protection. If the adjustment suggested to congress, by the views hazarded in this report, be in any wise entitled to their respect, it is not unreasonable to hope, that the various topics of national concern, at present engaging the attention of the people, may facilitate rather than embarrass the task.*

All who desire the welfare of the human race, with which the success of the principle on which the political arrangements of the United States are found-

ed is so essentially connected, will unite in the hope or at least the desire, that the opinion expressed in the last sentence quoted from Mr. M'Lane, may prove to be correct. Of this, many, however, entertain serious fears. Might it not be for the general good of the republic, if all the excess of revenue derived from maintaining the protecting duties, were divided among the states who deem themselves injured? If a judicious arrangement of this nature were effected, would not all parties be benefitted? If the accounts given of the injury sustained by South Carolina be correct, and the surplus revenue were proportionably divided, would not Charleston, by its magnificent edifices, and its improved communications with the interior, become one of the wealthiest and proudest cities, not only of the republic, but of the world? Or would her inhabitants still be unhappy, unless the rising towns of the north, the west, and the middle states, were depopulated?

* Finance Report, 1831, pp. 21, 23, 25 30.

FINANCES.—TABLE I.

RECEIPTS OF THE UNITED STATES, FROM MARCH 4, 1789, TO DECEMBER 31, 1829.

Years.	Customs.	Internal Revenue.*	Direct Taxes.†	Postage.	Public Lands.	Loans and Treasury Notes, &c.	Dividends and sales of Bank Stock and Bonds.	Miscellaneous.	Total.
	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.
From March 4, 1789, to December 31, 1791	4,399,473 09	208,942 81	• • • •	• • • •	• • • •	5,791,112 56	• 8,028 00	19,440 10	10,210,025 76
1792	3,443,070 85	337,705 70	• • • •	• • • •	• • • •	5,070,806 46	38,540 00	9,918 65	8,740,765 77
1793	4,255,306 56	374,089 62	• • • •	11,020 51	• • • •	1,097,701 14	303,472 00	10,390 37	6,720,624 28
1794	4,801,065 98	337,755 36	• • • •	29,478 49	• • • •	4,609,166 78	160,000 00	23,799 48	10,041,101 55
1795	5,858,461 85	475,289 60	• • • •	22,400 00	• • • •	3,305,268 20	1,240,000 00	5,917 97	9,419,892 79
1796	6,567,957 94	575,491 45	• • • •	72,909 84	4,836 13	362,800 00	385,220 00	16,506 14	8,740,329 65
1797	7,549,649 65	644,357 05	• • • •	64,500 00	83,540 60	70,135 41	79,920 00	30,379 29	8,758,916 40
1798	7,106,061 93	779,136 44	• • • •	39,500 00	11,963 11	308,574 27	71,040 00	18,692 81	8,209,070 07
1799	6,610,449 31	734,223 97	• • • •	41,000 00	• • • •	5,074,646 53	1,602,435 04	45,187 56	12,621,459 84
1800	9,080,332 73	809,396 53	784,223 97	78,000 00	• • • •	10,125 00	88,800 00	74,712 10	12,451,184 14
1801	10,750,772 93	1,048,033 43	534,343 38	79,500 00	167,726 06	5,697 36	177,905 86	256,149 15	12,945,455 95
1802	12,438,335 74	621,898 89	206,565 44	36,000 00	185,628 02	• • • •	1,327,560 00	177,905 86	15,001,391 31
1803	10,479,417 61	215,179 69	71,879 20	16,427 25	165,675 69	• • • •	• • • •	115,618 18	11,064,097 63
1804	11,098,565 33	50,941 29	60,198 44	26,500 00	487,625 79	• • • •	• • • •	112,575 53	11,886,840 02
1805	12,936,437 04	21,747 15	50,183 91	21,342 50	540,193 80	128,814 94	• • • •	19,039 80	13,689,608 14
1806	14,867,693 17	20,101 45	55,763 86	41,117 67	765,245 73	48,897 71	• • • •	10,004 19	16,608,823 78
1807	16,345,521 61	13,051 40	34,732 56	3,614 73	466,163 27	• 1,822 16	• • • •	34,935 69	16,398,019 26
1808	16,363,550 85	8,210 73	19,159 21	• • • •	647,939 06	• • • •	• • • •	21,892 35	17,052,544 09
1809	7,296,020 85	4,044 39	7,517 31	• • • •	442,252 33	2,759,992 25	• • • •	23,638 51	7,773,473 12
1810	8,583,309 31	7,430 63	12,448 68	• • • •	696,548 82	8,309 05	• • • •	84,476 84	12,144,206 53
1811	13,313,222 73	2,296 95	7,666 66	• • • •	1,040,237 83	12,837,900 00	• • • •	60,068 52	14,431,638 14
1812	8,958,777 53	4,903 06	7,889 22	85,039 70	710,427 78	28,184,435 00	• • • •	41,125 47	22,639,032 75
1813	13,224,623 25	4,755 04	3,805 52	35,000 00	635,655 14	23,377,911 79	• • • •	236,571 00	40,524,844 95
1814	5,998,772 08	1,692,984 82	2,219,497 36	45,000 00	1,135,971 09	36,264,320 78	• • • •	119,399 81	34,559,536 95
1815	7,282,942 22	4,678,059 07	2,162,673 41	135,000 10	1,287,959 28	9,494,436 16	• • • •	123,994 61	67,171,421 82
1816	36,308,874 88	5,124,705 31	4,253,695 09	149,787 74	1,717,985 03	734,542 59	202,426 30	80,389 17	33,533,692 33
1817	25,283,345 49	2,678,100 77	1,834,187 04	29,371 91	1,991,226 06	8,765 62	526,000 00	37,547 71	21,693,386 66
1818	17,176,385 00	965,279 20	284,333 36	20,070 00	2,606,654 77	2,291 00	1,000,000 00	57,027 10	24,606,665 87
1819	20,282,608 76	229,593 63	83,660 78	71 32	3,274,422 78	3,040,824 13	105,000 00	54,872 49	20,881,493 68
1820	15,005,612 15	406,260 53	31,586 82	6,465 95	1,635,371 61	5,000,324 00	297,500 00	152,072 52	19,573,703 72
1821	17,593,761 94	67,666 71	20,391 56	616 91	1,212,965 46	• • • •	350,000 00	462,355 15	20,232,427 94
1822	17,593,761 94	34,242 17	10,357 71	602 04	1,816,523 10	• • • •	350,000 00	141,019 15	20,540,666 26
1823	19,088,433 44	34,663 37	6,201 96	• • • •	964,418 15	5,000,000 00	350,000 00	127,603 60	24,381,212 79
1824	17,878,325 71	25,771 35	2,330 85	469 56	1,216,090 66	5,000,000 00	367,500 00	129,982 25	25,640,558 02
1825	20,098,713 45	25,771 35	6,698 76	200 14	1,393,765 09	• • • •	402,500 00	94,988 52	25,640,558 02
1826	23,341,331 77	21,569 93	2,696 90	101 00	1,495,845 26	• • • •	420,500 00	1,316,621 83	25,640,558 02
1827	19,712,283 29	19,885 68	2,696 90	20 15	1,018,308 75	• • • •	450,000 00	65,106 34	22,966,363 96
1828	23,205,523 64	17,451 54	2,218 81	• • • •	1,457,004 66	• • • •	490,000 00	112,425 62	24,767,122 23
1829	22,681,965 91	14,404 74	11,321 29	• • • •	2,329,356 14	• • • •	490,000 00	102,318 98	24,844,116 61
1830	21,922,391 39	• • • •	• • • •	• • • •	• • • •	156,181,578 57	9,903,506 30	4,775,063 15	753,809,781 29
TOTAL	542,219,368 28	22,204,438 03	12,702,597 11	1,090,275 91	34,732,863 94	• • • •	• • • •	• • • •	• • • •

* From the year 1802 to 1813, and subsequently to 1818, there were no internal taxes, the receipts being only arrears from former years.

† From 1803 to 1813, and subsequently to 1817, there were no direct taxes, the receipts being only arrears.

FINANCES.—TABLE II.

EXPENDITURE OF THE UNITED STATES, FROM MARCH 4, 1789, TO DECEMBER 31, 1829.

Year.	Civil List.	Foreign Intercourse.	Miscellaneous.	Public Debt.	Naval Establishment.	MILITARY ESTABLISHMENT.			TOTAL.	Balances in the Treasury at the end of each year.
	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.	Dollars. Cts.	Military services, including Fortifications, Armories, Ordnance, and other means, &c.	Revolutionary Pensions.	Other Pensions.		
From March 4, 1789, to December 31, 1791	767,134 45	14,733 33	311,533 83	5,283,434 60	570 00	632,804 03	1,581,813 88	1,581,813 88	7,207,537 02	373,905 76
1792	380,917 68	78,766 67	194,572 32	7,283,665 99	53 02	1,100,702 09	1,092,243 15	1,092,243 15	9,141,569 67	783,444 51
1793	358,241 08	89,500 00	24,709 46	5,813,505 29	61,408 97	1,130,249 08	80,087 81	80,087 81	7,629,575 55	753,661 69
1794	440,946 58	146,403 51	118,248 30	5,801,578 09	410,562 03	2,639,007 59	81,399 24	81,399 24	9,302,124 74	1,151,924 17
1795	361,633 36	912,685 12	92,718 50	6,084,411 61	274,784 04	2,450,910 13	68,673 22	68,673 22	10,435,069 65	516,442 61
1796	447,139 05	184,569 64	150,476 14	5,935,546 44	382,631 59	1,260,920 84	100,843 71	100,843 71	8,367,776 84	888,995 42
1797	483,233 70	669,758 54	103,880 82	5,792,421 82	1,381,347 76	1,039,402 66	92,256 97	92,256 97	8,626,012 78	1,021,999 04
1798	504,605 17	457,428 74	149,004 15	3,990,294 14	2,558,081 84	2,009,522 30	104,845 33	104,845 33	8,613,517 68	617,451 43
1799	592,905 76	271,374 11	175,111 81	4,594,876 78	3,448,716 03	2,066,946 98	64,430 73	64,430 73	11,077,043 60	2,161,867 77
1800	748,688 45	395,288 13	193,636 59	4,573,369 95	2,558,081 84	2,560,878 77	95,444 03	95,444 03	11,980,239 92	2,623,311 99
1801	549,938 31	295,676 73	269,803 41	7,291,707 04	2,111,424 00	1,672,944 03	73,533 37	73,533 37	12,273,376 94	3,295,391 00
1802	596,951 11	550,925 93	315,022 36	9,539,001 76	315,561 87	1,173,148 25	86,440 39	86,440 39	13,256,084 67	5,020,637 64
1803	526,963 12	1,186,655 57	205,217 87	7,256,139 43	1,216,230 53	322,065 85	62,902 10	62,902 10	12,624,646 36	4,037,005 26
1804	624,795 63	1,186,655 57	379,558 23	8,171,787 45	1,189,592 75	875,423 93	80,092 80	80,092 80	13,727,124 41	3,999,388 99
1805	535,549 79	2,798,038 77	384,720 19	7,368,889 79	1,597,500 00	712,781 28	81,875 53	81,875 53	15,070,093 97	4,538,123 80
1806	684,230 63	1,700,421 30	445,435 18	8,989,884 61	1,649,641 44	1,224,355 38	70,500 00	70,500 00	11,292,292 97	9,643,850 07
1807	655,324 65	577,826 34	464,546 52	6,307,720 10	1,722,064 47	1,283,635 91	82,576 04	82,576 04	16,764,584 20	9,941,809 96
1808	691,167 80	304,992 83	427,124 98	10,260,245 35	1,834,067 80	2,900,834 40	87,833 54	87,833 54	13,867,226 30	3,648,055 78
1809	712,465 13	166,306 04	337,032 62	6,432,554 16	2,427,758 80	3,345,772 17	83,744 16	83,744 16	17,776,992 57	2,672,276 57
1810	703,994 03	81,367 48	315,783 47	8,003,904 05	1,654,244 20	2,294,323 94	75,043 88	75,043 88	13,601,806 91	3,602,305 80
1811	644,467 27	254,904 47	457,919 66	8,009,204 05	1,953,566 99	2,032,928 19	91,409 10	91,409 10	22,279,121 15	3,862,217 41
1812	826,271 55	347,703 29	500,113 37	4,419,692 45	3,553,265 15	11,812,798 24	86,989 91	86,989 91	33,190,520 36	5,196,542 00
1813	780,545 45	209,941 01	738,949 15	11,108,138 44	6,446,600 10	19,652,013 02	90,164 36	90,164 36	36,028,230 82	1,727,648 63
1814	927,424 23	177,179 97	1,103,435 59	7,900,643 94	7,311,290 60	20,350,806 86	69,656 06	69,656 06	39,852,493 35	13,106,592 88
1815	852,247 16	290,892 04	1,755,731 27	12,628,922 35	8,060,000 35	14,794,294 22	188,804 15	188,804 15	48,244,495 51	22,033,519 19
1816	1,208,125 77	364,620 40	1,416,995 00	24,871,062 93	3,908,278 80	16,012,096 80	297,374 43	297,374 43	40,877,646 04	14,989,465 48
1817	994,656 17	281,995 97	2,242,384 62	25,423,036 12	3,314,598 49	8,004,236 53	590,719 90	590,719 90	36,104,875 40	1,478,626 74
1818	1,109,559 79	420,429 90	2,305,849 82	21,296,201 62	2,953,695 00	6,622,715 10	568,039 00	568,039 00	24,004,199 73	2,079,992 88
1819	1,243,180 41	284,113 94	1,640,917 06	7,703,926 29	3,847,640 42	6,806,300 37	441,936 31	441,936 31	21,763,024 85	1,198,461 21
1820	1,435,310 05	253,370 04	1,090,341 85	8,628,494 28	4,387,990 00	2,630,392 31	242,817 25	242,817 25	19,090,572 69	1,681,592 24
1821	1,112,292 64	207,110 75	903,718 15	7,848,993 62	3,219,243 06	4,161,981 79	305,608 46	305,608 46	17,676,592 63	4,237,427 55
1822	1,158,131 68	164,879 51	44,955 15	8,968,940 12	2,224,458 98	3,461,981 48	331,491 48	331,491 48	15,314,171 00	9,463,922 81
1823	1,053,911 85	292,118 56	671,063 78	5,530,016 41	2,503,765 53	3,096,924 43	231,726 18	231,726 18	31,898,533 27	1,946,597 13
1824	1,338,266 84	5,140,099 88	678,942 74	12,068,363 76	2,004,083 86	3,240,390 85	1,308,810 57	1,308,810 57	23,583,804 72	5,201,650 43
1825	1,320,747 84	371,666 28	1,046,131 40	12,068,363 76	4,218,902 46	3,943,194 37	1,305,194 82	1,305,194 82	24,108,398 46	6,868,686 18
1826	1,266,745 48	232,719 08	1,110,713 23	10,003,668 39	4,263,877 45	3,938,977 88	723,134 80	723,134 80	25,565,765 04	6,666,886 10
1827	1,228,141 04	659,211 87	826,123 67	12,163,438 07	3,913,786 44	4,145,644 56	767,492 38	767,492 38	25,469,479 62	5,972,435 81
1828	1,455,490 68	1,001,193 66	1,219,368 40	12,163,438 07	3,913,786 44	4,145,644 56	185,344 26	185,344 26	25,071,017 59	6,668,640 44
1829	1,323,956 86	207,060 35	1,570,666 66	12,383,800 77	3,312,931 87	4,730,605 03	14,174,274 33	14,174,274 33	10,590,582 57	753,997,124 34
TOTAL	32,400,706 44	23,225,074 49	26,991,517 23	362,719,701 34	101,656,137 64	175,469,957 86	6,119,172 44	6,119,172 44	753,997,124 34	

FINANCES.—TABLE III.

A STATEMENT OF THE EXPENDITURES OF THE UNITED STATES FOR THE YEAR 1829.

CIVIL, MISCELLANEOUS, AND FOREIGN INTERCOURSE.	Dollars. Cts.	Dollars. Cts.	MILITARY ESTABLISHMENT—continued.	Dollars. Cts.	Dollars. Cts.
Legislature	467,447	59	Ordnance	95,551	88
Executive departments	530,172	14	Armament of fortifications	136,767	61
Officers of the Mint	9,600	00	Arming and equipping of militia	219,654	37
Surveyors and their clerks	23,057	44	Repairs and contingencies of fortifications	7,495	30
Commissioner of the public buildings	2,900	00	Fort Monroe	101,500	00
Governments in the territories of the United States	55,344	99	— Calhoun	100,000	00
Judiciary	239,447	20	— Delaware	12,000	00
		1,327,069 36	— Hamilton	100,000	00
Annuities and grants	1,800	00	— Adams	97,277	06
Mint establishment	34,265	00	— Jackson	16,000	00
Extending the Mint establishment	51,666	67	— at Mobile Point	100,000	00
Unclaimed merchandise	716	69	— Macon	57,975	00
Lighthouse establishment	289,149	07	— at Oak Island, North Carolina	66,534	12
Surveys of public lands	51,289	08	Fortifications at Charleston, South Carolina	31,672	00
Registers and receivers of land offices	1,125	00	Ditto at Savannah, Georgia	4,800	00
Preservation of the public archives in Florida	1,077	45	Ditto at Pensacola, Florida	90,000	00
Land claims in Florida territory	3,549	74	Repairs and preservation of Fort Lafayette	22,000	00
Ditto in Michigan territory	2,202	79	Completion of battery at Bienvenue	6,447	80
Ditto in St. Helena land district	800	00	Erection of a tower at Bayou Dupre, Lafayette	16,677	41
Roads within the state of Ohio	3,577	93	Construction of a wharf at Fort Constitution, Portsmouth, New Hampshire	600	00
Roads and canals within the state of Indiana	8,902	11	Construction of a wharf at Fort M'Henry, Baltimore, Maryland	1,500	00
Encouragement of learning within the state of Illinois	1,727	83	Construction of a wharf at Fort Wolcott	31	21
Repayment for lands erroneously sold by the United States	92	50	Barracks at Michilimackinac, Michigan	1,765	40
Marine Hospital establishment	63,562	28	Ditto at Fort Sullivan, Eastport, Maine	2,500	00
Appropriation for the Navy Hospital fund	125,000	00	Ditto Trumbull, New London, Connecticut	5,900	00
Public buildings in Washington	74,114	67	Barracks at Fort Severn, Annapolis, Md.	1,000	00
Penitentiary for the District of Columbia	14,500	00	Ditto Winnebago, N. W. T.	9,000	00
Accommodation of the President's household	14,000	00	Ditto Crawford, Prairie du Chien, N. W. T.	10,000	00
Consular receipts, under the act of April 14, 1792	156	84	Erection of a breakwater at the mouth of Delaware Bay	66,905	00
Bringing votes for President and Vice-President	2,706	50	Building piers, mouth of Oswego River, N. Y.	22,618	34
Payment of balances to officers of old internal revenue	215	57	Ditto ditto . . . Buffalo Creek, N. Y.	9,206	00
Payment of balances to collectors of new internal revenue	248	46	Ditto New Castle, Delaware	17,995	99
Payment of claims for buildings destroyed	1,480	00	Ditto at Allen's Rock, Warren River	3,751	26
Florida claims	1,238	74	Ditto at La Plaisance Bay, Michigan	2,000	00
Stock in the Louisville and Portland Canal Company	143,500	00	Ditto &c. Merrimack River, Conn.	32,100	00
Stock in the Dismal Swamp Canal Company	50,000	00	Ditto &c. Stonington, Connecticut	19,358	14
Ditto Chesapeake and Ohio Canal Company	125,000	00	Ditto harbour of Dunkirk, New York	9,812	75
Stock in the Chesapeake and Delaware Canal Company	150,000	00	Extending piers, harbour of Edgartown, Massachusetts	2,500	00
Building custom-houses and warehouses	9,131	93	Extending piers, harbour of Black Rock, N. Y.	30,000	00
Revolutionary claims, per act of May 15, 1828	288,445	24	Examining piers at Sandy Bay, Massachusetts	150	00
Miscellaneous expenses	51,436	57	Repairing piers at Port Penn and Marcus Hook, Pennsylvania	5,000	00
		1,566,679 66	Repairing piers at Kennebunk River, in Maine	5,000	00
Diplomatic department	122,452	14	Preservation of islands in Boston Harbour	61,203	60
Contingent expenses of foreign intercourse	15,515	16	Completion of sea-wall, George's Island, Boston Harbour	7,310	54
Agency in relation to northeastern boundary	19,280	22	Deepening the harbour of Sackett's Harbour, New York	1,187	00
Relief and protection of American seamen	10,410	67	Deepening the harbour of Mobile, Alabama	2,550	00
Treaties with the Mediterranean powers	11,938	88	Ditto the channel through the Pass au Heron, near Mobile Bay	2,250	00
Claims on Spain	18,537	40	Deepening the channel between St. John's and St. Mary's Harbour	10,000	00
Payment of claims under the ninth article of the treaty with Spain	598	00	Closing the breach made in the Peninsula at Presque Isle Bay, Pennsylvania	7,390	25
Awards under the first article of the treaty of Ghent	9,033	38	Improving the navigation of the Ohio and Mississippi rivers	47,200	60
		207,765 85	Improving the navigation of the Ohio River	10,000	00
MILITARY ESTABLISHMENT.		3,101,514 87	Ditto ditto . . . of Red River, Arkansas	5,760	00
Pay of the army, and subsistence of officers	1,134,284	40	Ditto ditto . . . of Mill River, Conn.	3,941	00
Subsistence	299,408	63	Ditto ditto . . . of Genesee River, New York	10,000	00
Quartermaster's department	341,138	18	Improving the navigation of Cape Fear River, North Carolina	6,760	00
Forage	39,374	97	Improving the navigation of Conneaut Creek, Ohio	6,590	00
Clothing or purchasing department	167,366	41	Improving the navigation of the harbour of Cleveland, Ohio	9,000	00
Bounties and premiums	25,601	13	Improving the navigation of the harbour of Hyannis, Massachusetts	1,650	00
Expenses of recruiting	13,987	84	Removing obstructions, mouth of Grand River, Ohio	3,135	11
Medical or hospital department	23,362	14	Removing obstructions, Huron River, Ohio	5,935	00
Purchase of woollens for 1829 and 1830	20,000	00			
Contingencies	7,987	39			
Military Academy, West Point	27,925	11			
Armories	361,384	44			
Arsenals	107,125	18			
Arsenal at Augusta, Maine	18	40			
Ditto at Mount Vernon, Alabama	23,200	00			

FINANCES.—TABLE III.—CONTINUED.

NAVAL ESTABLISHMENT—continued.		Dollars. Cts. Dollars. Cts.		NAVAL ESTABLISHMENT—continued.		Dollars. Cts. Dollars. Cts.	
Contingent expenses not enumerated for 1829		3,092	32	Contingen expenses for 1824 . . .	61	88	
Pay and subsistence of the marine corps . . .	117,329	19		Ditto . . . ditto . . . for 1826 . . .	180	82	
Clothing of the marine corps	11,850	61		Ditto . . . ditto . . . for 1829 . . .	1,398	81	
Military stores of the marine corps	693	36					97,144 98
Medicines for the marine corps	794	77					3,308,745 47
Barracks for the marine corps	363	98					
Repairing marine barracks at Washington . . .	3,499	42					
Fuel for the marine corps	8,504	34					
Contingent expenses of the marine corps . . .	13,792	76					
	3,405,890	45					
From which deduct the following repayments:				PUBLIC DEBT.			
Gradual increase of the navy . . . \$29,795	86			Interest on the funded debt	2,542,943	28	
Building ten sloops of war . . . 19,592	24			Redemption of the 6 per cent. stock of 1814, (loan of ten millions)	6,251,827	59	
Repairing and building sloops of war . 9,743	25			Redemption of the 6 per cent. stock of 1814 .	537,895	77	
Navy hospital fund 20,823	99			Ditto . . . ditto . . . ditto of 1815, (loan of \$18,450,800)	3,049,542	93	
Navy pension fund 15,462	77			Principal and interest of Treasury notes . . .	1,264	27	
Privateer pension fund 62	06			Reimbursement of Mississippi stock	450	00	
Contingent expenses prior to 1824 . . . 23	30			Paying certain parts of the domestic debt . . .	43	99	
					12,383,867	78	
				TOTAL	25,044,358	40	

FINANCES.—TABLE IV.

SHOWING THE AMOUNT OF THE PUBLIC DEBT, AT SEVERAL PERIODS, FROM 1791 TO 1832, RECKONED ON THE 1st JANUARY, IN EACH YEAR.

In 1791 \$75,169,974	There was some increase of the debt in each of these six years, except 1794, in which there was a reduction of it.	In 1817 \$115,807,805	Mr. Monroe's administration. Rapid reduction of the debt since 1816; the receipts from the customs, &c. being large.
1796 81,642,272		1820 91,015,566	
1799 77,399,909		1821 89,987,427	
1801 82,000,167		1822 93,546,676	
1803 74,731,922	The debt was increased in consequence of the military preparations against France, before the year 1801, when Mr. Jefferson's administration commenced.	1823 90,375,877	The debt increased in consequence of the purchase of Florida, in 1821, for the sum of \$5,000,000; and a diminution in the receipts from the customs, &c. in the years 1820, 1821, &c. Mr. Monroe's administration ended in 1825.
1804 85,353,643		1824 90,269,777	
1809 56,732,379		1825 83,788,432	
		1826 81,054,059	
1810 53,156,532	The debt was increased by the purchase of Louisiana, in 1803, for the sum of \$15,000,000. Mr. Jefferson's administration ended March 3d, 1809.	1827 73,987,357	Mr. Adams's administration commenced on the 4th of March, 1825, and ended on the 3d of March, 1829.
1812 45,035,123		1828 67,475,622	
1813 55,907,452		1829 58,362,135	
1816 123,016,375		1830 48,565,405	
	The debt greatly augmented by the war:—highest amount in 1816.	1831 39,082,461	General Andrew Jackson's administration began on the 4th of March, 1829.
		1832 24,282,879	

FINANCES.—TABLE V.

A STATEMENT OF THE FUNDED DEBT AS IT EXISTED ON THE 1st OF JANUARY, 1831 AND 1832; ALSO THE DATES OF THE ACTS UNDER WHICH THE SEVERAL STOCKS WERE CONSTITUTED, AND THE PERIODS AT WHICH THEY ARE REDEEMABLE.

STOCKS.	Date of the Acts constituting the several Stocks.	WHEN REDEEMABLE.	AMOUNT, 1831.	AMOUNT, 1832.
Three per cent. stock, (revolutionary debt) . . .	4 Aug. 1790	At the pleasure of government .	\$13,296,397 57	\$13,296,626 21
Five per cent. stock, (subscription to Bank U. S.) . .	10 Apr. 1816	Ditto ditto	4,000,000 00	.....
Five per cent. stock	15 May, 1820	After the 1st day of Jan. 1832 .	999,999 13	.....
Five per cent. stock	3 Mar. 1821	After the 1st day of Jan. 1835 .	4,735,296 30	4,735,296 30
Five per cent. stock, (exchanged)	20 Apr. 1822	{ after the 31st day of Dec. 1830 } { after the 31st day of Dec. 1831 } { after the 31st day of Dec. 1832 }	56,704 77	56,704 77
Four and a half per cent. stock	24 May, 1824	After the 1st day of Jan. 1832 .	5,000,000 00	1,739,524 01
Four and a half per cent. stock	26 May, 1824	After the 31st day of Dec. 1831 .	5,000,000 00	.....
Four and a half per cent. stock, (exchanged) . . .	26 May, 1824	{ after the 31st day of Dec. 1832 } { after the 31st day of Dec. 1833 } { after the 31st day of Dec. 1834 }	4,454,727 95	4,454,727 95
Four and a half per cent. stock, (exchanged) . . .	3 Mar. 1825	{ after the 31st day of Dec. 1828 } { after the 31st day of Dec. 1829 }	1,539,336 16	.....
			\$39,082,461 88	\$24,282,879 24

FINANCES.—TABLE VI.

SHOWING THE WHOLE QUANTITY OF LAND IN THOSE STATES AND TERRITORIES IN WHICH THE PUBLIC LAND IS SITUATED; THE QUANTITY OF PUBLIC LAND TO WHICH THE INDIAN TITLE HAD BEEN EXTINGUISHED, JUNE 30, 1828; AND THE QUANTITY TO WHICH IT HAD NOT BEEN EXTINGUISHED AT THE SAME DATE.

STATE OR TERRITORY.	Whole quantity of land in each state or territory.	Quantity of land belonging to the United States, to which the Indian title is extinguished.	Quantity of land belonging to the United States, to which the Indian title is not extinguished.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Tennessee	26,432,000	3,000,000	.....
Mississippi	31,074,234	11,514,517	16,885,760
Indiana	22,459,669	12,308,455	5,335,632
Ohio	24,810,246	4,984,348	409,501
Louisiana	31,463,040	25,364,197	.....
Illinois	35,941,902	23,575,300	6,424,640
Michigan Territory, (peninsular)	24,939,870	16,393,420	7,373,400
Arkansas, (ditto)	28,899,520	26,770,941	.....
Missouri	39,119,019	35,263,541	.....
Florida Territory	35,286,760	29,728,300	4,032,640
Alabama	34,001,226	19,769,679	9,519,066
Territory of Huron, lying west of Lake Michigan, and east of the Mississippi River	334,627,486	205,672,698	49,985,639
Great Western Territory, extending from the Mississippi River to the Pacific Ocean	56,804,854	.....	56,804,834
	760,000,000	.....	750,000,000
Add quantity to which the Indian title is extinguished	1,140,432,330	.....	856,790,473
TOTAL acres belonging to the United States . . . . .	.....	.....	205,672,698
			1,062,463,171

FINANCES.—TABLE VII.

SHOWING THE QUANTITY OF LAND SOLD IN EACH OF THE SEVERAL STATES AND TERRITORIES, FROM THE 1st OF JULY, 1820, TO THE 31st OF DECEMBER, 1829, A PERIOD OF NINE YEARS AND A HALF.

	<i>Acres. hds.</i>		<i>Acres. hds.</i>
Alabama	1,459,054 73	Illinois	667,200 44
Mississippi	544,523 82	Missouri	923,506 32
Louisiana	150,839 35	Florida Territory	336,567 50
Ohio	1,405,267 73	Michigan Territory	443,209 23
Indiana	2,169,149 70	Arkansas Territory	59,899 36
		TOTAL	8,167,218 23

FINANCES.—TABLE VIII.

SHOWING THE QUANTITY OF LAND SOLD IN EACH OF THE FOLLOWING YEARS.

	<i>Acres. hds.</i>		<i>Acres. hds.</i>
In half the year of 1820	303,404 09	In 1825	893,461 69
In 1821	781,213 32	In 1826	848,082 26
In 1822	801,226 18	In 1827	926,727 76
In 1823	653,319 52	In 1828	965,600 36
In 1824	749,323 04	In 1829	1,244,860 01
		TOTAL	8,167,218 23

CHAPTER V.

POPULATION.

WHERE the increase of the human family is looked upon as an evil, society must be poisoned at its very source, and some great change must be both needful and near. The United States are happily circumstanced in this respect, whatever disadvantages they may lie under in others; there, at least, the human infant is not welcomed with less satisfaction than though he were one of the progeny of the stall or the sty; but the rapid increase of the population is esteemed conducive alike to the wealth, the glory, and the happiness of the republic.

It is greatly to be regretted, that the different nations of the civilized world have not kept regular and authentic accounts of the progress of their population, as important moral and political truths might have been elucidated by comparison, if such tables had existed. It appears that the population of France does not double itself in less than 150 years, and that of Great Britain in about half that time; while the population of the United States doubles itself in less than thirty years. The congress early determined to ascertain, at regular intervals, the progress of population; and, according to its enactments, the first census was taken in the year 1790. The number of inhabitants was then nearly 4,000,000, of whom not quite 700,000 were slaves; in 1800, the population had increased to 5,300,000, of whom nearly 900,000 were slaves; in 1810, the numbers were 7,239,000, of whom 1,191,000 were slaves; in 1820, 9,638,000, of whom 1,538,000 were slaves; and, in 1830, the population amounted to 12,856,000, of whom rather more than 2,000,000 were slaves. The precise particulars, including the numbers in each state, will be found in Tables I. and II. annexed to this chapter. It will be perceived, that in the forty years during which the census has been taken, the increase of the population has been steady, though rapid; and that it is, at the close of the period, more than three times the number that it was at the commencement. The increase during the last ten years has been 33.4 per cent., which is quite equal to that of the preceding periods. The increase of the free population has uniformly been the most rapid, and that of the slaves the most retarded: the increase of the slaves will, hereafter, be further checked, as their importation has been some years prohibited. From 1800 to 1810, the ratio of the increase of the free population was lessened, and that of the slaves augmented: the former effect was, probably, owing to the small addition accruing from immigration; and

the latter to the importation of negroes from 1800 to 1808, especially in 1806 and 1807, in anticipation of the prohibition of the inhuman traffic in slaves; the number of the slaves was also increased by the additions of Louisiana, where they constituted nearly the half of the population.

The rapidity of the increase of the population of the United States forms the principal fact on which the Malthusian system has been founded; and it has consequently been a subject of much controversy, whether its ratio is materially affected by immigration. There appears to be no decisive authority by which to determine the actual number of emigrants arriving annually in the United States. Dr. Seybert estimates their amount from 1790 to 1810 at 6,000 per annum. "In 1790," says Dr. Seybert, "the free population of the United States amounted to 3,223,629 persons, and in 1810 it was 6,048,539; the actual increase in the twenty years was 2,824,910, from which deduct 120,000, for the emigrants who arrived during that period, and allow for their increase at the extraordinary rate of 5 per cent. per annum, or 60,000 for the twenty years, making the aggregate from the emigrant stock 180,000, which, when deducted from the total actual increase abovementioned, will leave 2,644,910 persons for the augmentation, independent of any aid from abroad; or the duplication of the free inhabitants, without addition from the emigrants, would only require about four fifths of a year more than it did when they were added."* Messrs. Godwin and Booth, opponents of Mr. Malthus, take another method of ascertaining the amount of immigration, and arrive at a very different result: "When enumerations are taken every ten years, it is obvious, exclusive of immigration, that, in any particular census, the persons living above ten years of age must have all existed in the census immediately preceding. In that of 1810, for instance, all above ten years formed part of the population for 1800, and are in reality the same, except inasmuch as they are diminished by death. Those under ten have all been born in the interval between the censuses. Comparing the American censuses on this principle, we shall find an astonishing extent of immigration. The white population of 1800 was 4,305,971. These in ten years would be diminished by a fourth. It is very improbable that more than 3,200,000 would have been alive in 1810; for, whatever proportion the births of that country may bear to the whole population, the proportion of deaths is certainly greater than in Europe. These 3,200,000, then, should have

* Statistical Annals, p. 30.

constituted the number of those above ten years of age in the census of 1810, had there been no importation from other countries. But the actual census above ten years of age was 3,845,389, giving a surplus of 645,389, which can be accounted for in no other way than by immigration.

To account for the difference between the censuses of 1800 and 1810, the immigration must have been, therefore, on the principles adopted by Godwin and Booth, at least 35,000 per annum, being nearly six times the number calculated by Dr. Seybert. This would appear to be utterly inconsistent with facts, and as far above the truth as Dr. Seybert's estimate is below it. The solution of this difficulty must be sought in the incorrect estimate of the ratio of deaths which has been adopted—that of one fourth in ten years. The *Edinburgh Review* runs to the other extreme, and estimates the proportion of deaths at only one eighth. "If we had American tables," says the writer, supposed to be Mr. Malthus himself, "formed like those of Dr. Price for Sweden, we should expect that, on account of the peculiar structure of the American population, arising from the great excess of births above deaths, it would turn out that the proportion which a given population, without any fresh accession of births, would lose in ten years, instead of being rather more than one seventh, would not be more than one eighth; in which case, the amount of immigration annually would, by Mr. Booth's own rule, be only between seven and eight thousand, and the period of doubling would come near to the calculation of Dr. Seybert."* Mr. Booth has occupied a considerable portion of his reply in proving this statement of the *Edinburgh reviewer* to be incorrect. The details of the controversy, owing to the absence of any direct and general authentic data, are by far too intricate and extended to introduce into our work; we shall therefore satisfy ourselves with stating, that, after investigating the subject, we are convinced that the truth lies, as in many other cases, between the two extremes, the result of Mr. Booth's estimate of the deaths being quite irreconcilable with the annual rate of immigration upon the most liberal scale; and that of the *Edinburgh reviewer*, making every allowance for the different condition and circumstances of the United States, being inconsistent with the ratio of deaths in other countries. From the result of these statements, in themselves contradictory, but constituting, in fact, checks upon each other, we think it may be conclu-

ded, with some tolerable degree of satisfaction, that the ratio of deaths is about one sixth in every ten years,† which, allowing a procreative increase from immigration at the rate of ten per cent. per annum instead of five per cent., as calculated by Dr. Seybert, would require the number of immigrants to have been, from 1800 to 1810, at least 10,000 annually.

A much more masterly performance than the labours either of Mr. Godwin or Mr. Booth has recently appeared in opposition to the Malthusian system, from the pen of Mr. Sadler; indeed, however our opinions may differ from some of his deductions, the "Law of Population" is equally creditable to the soundness of the author's principles as a moralist, and to his indefatigable industry as a political economist. "The theory," says Mr. Sadler, "that mankind would double, at the very slowest rate of increase, by procreation only, in five-and-twenty years, is founded upon the supposed increase of various colonies of America, and, finally, upon the growth of the entire population of the United States, which, it is asserted, have doubled, on the lowest calculation, in that term, and many much more rapidly, independently of foreign emigration. In refutation of this position, it has been shown, that none of the states instanced have ever so doubled in any part of their history; that the population of New England in particular, as well as that of the remaining colonies, at the period whence these doublings are dated, has been grossly understated, and that there are not, in reality, half the number of white inhabitants now in the United States that the theory demands, had not a single emigrant proceeded to that country; that, on the contrary, a vast and incessant afflux of emigrants has proceeded to America, first from England, but, very early afterwards, from the remaining parts of the British empire, and from every country of Europe; that, so far from this emigration having been immaterial in its effects, it has influenced, in every possible way, the manners, customs, habits, religion, and even language, of the various states; has shown its presence by every species of statistical evidence, excepting that of direct enumeration; that, more satisfactorily even than by such a mode, it has manifested its extent, by altering the natural proportion of the sexes, and the classifications of society throughout; has varied the established proportions of nature, as it respects the ages of the living in the censuses, and of the dead in the registers of mortality: and, finally, to epitomize the argument no further, it has

* *Edinburgh Review*, No. LXX. pp. 365, 366.

† The assertion of Mr. Booth, that, "however the births in the United States may exceed those of Europe, the deaths can not be

less numerous," is obviously unsatisfactory, as there are many circumstances in a newly-settled country which tend to diminish the ratio of deaths, although there are some of an opposite character

been proved, from the very admissions of those who are anxious to demonstrate to the contrary, that emigration has been the main cause of that rapid increase in the population of America, on which alone they build their entire system." Nearly one half of the two thick octavo volumes, of which Mr. Sadler's work is composed, is devoted to the consideration of the rate of increase of the population of the United States, and abounds with calculations which must be the result of a high degree of mental exertion; but we can obtain no specific result from his pages, unless it be that the population of the United States is wholly (the Indians excepted) derived from emigration from Europe,* a fact sufficiently manifest to persons at all acquainted with American history. We cannot perceive where Mr. Sadler draws any line: all the inhabitants of the United States are the descendants of emigrants undoubtedly; but the first point at issue is, stating the population of the United States at nine and a half millions in 1820, and at twelve and a half in 1830, how many of the persons composing the difference between these two amounts were immigrants from foreign countries? The second point to ascertain would be, how many persons were living in 1830, born within the term of the last census, of parents one or both of whom were not natives of the United States? These would be two plain and simple statements, and would be the utmost that could be interesting to the national statistics of America; indeed, we doubt whether the latter is at all necessary, as the natives of a country can in no practical sense be considered immigrants. To what further extent the estimate of the influence of emigration must be carried to overthrow the system of Malthus we do not perceive, unless it be to the "pilgrim fathers," which would be equally subversive of all systems.

It is much to be regretted that authentic records of the immigrants arriving in the United States are not regularly kept and annually published by the government of the United States: such information of this

character as exists we shall now lay before our readers. "The subject of emigration to this country," says the editor of the *North American Review*, "is not, however, one involved in such utter darkness, but that we can do something towards enabling our readers to form a tolerably correct estimate of the actual number of foreigners who arrive here; and the first document which we offer is nothing more nor less than an official transcript of all the lists of passengers who arrived in the United States from the 1st October, 1819, to September 30th, 1820, inclusive:—total arrived, 7,001; of these there are 1,959 females and 5,042 males.† Now it is to be observed, that this list embraces not only the foreigners coming here with the intention of remaining, but those who came here only on a visit, and our own citizens, who returned from visits to foreign countries. For these reasons we should deduct nearly all of the following classes, viz.: ambassadors, clergymen, consuls, judges, lawyers, merchants, mariners, physicians, supercargoes, gentlemen, and ladies, and probably the planters, amounting in the whole to 1,579, which leaves but 5,422. But as our deductions are merely conjectural, we will estimate the number of emigrants for that year at 6,000. A second report for the year ending 30th September, 1821, was presented to congress at their last session; but, owing to some strange oversight, no order was passed for its being printed. The particulars, therefore, we are not acquainted with; but we have ascertained that the whole number of passengers was 10,722, of which 2,415 were from the United States, leaving 8,307 foreigners. Besides this, we have a newspaper before us, which professes to give an abstract of official returns ordered to be printed by the house of commons of Great Britain. From these it appears, that from the year 1812 to the year 1821, both years included, there emigrated to the United States—from Ireland, 30,653; from England, 33,608; from Scotland, 4,727: the whole amount of emigrations to the United States, 68,988. During the same period, there embarked for

* "Mr. Malthus has, indeed, only commenced his calculation, relative to this annual emigration, with the year 1782; but I think it will be quite as difficult for him to persuade the historian that emigration first began at that period, as to convince the arithmetician, that even if calculated only thence, such an addition, increasing as he admits, can have been 'immaterial,' whoever may attempt demonstrations to the contrary."—*Sadler on Population*, vol. ii. p. 79.

† Taking the scale of emigration at 10,000, the calculation of Mr. Sadler, founded on the proportion of marriages which would arise from this relative proportion of males and females among the immigrants, (a calculation evidently exaggerated in favour of his own position, as he makes no adequate deduction from the number of males for travellers on pleasure or business,) very little exceeds our estimate of the addition which immigration occasions,

(one fifth,) and, if connected in correspondence with the intimation just made, would probably accord with an accuracy somewhat surprising.—See "Law of Population," vol. i. pp. 50 and 58. It is true that we calculate an immigration of 20,000 per annum to be necessary to produce the same result; but that is on the supposition that if the unmarried immigrants marry American females, the procreative result was not wholly to be carried to the account of the immigrants, but to be divided; and still less that the results of the intermarriages of the children of the immigrants with native Americans should be placed also to the same account. Upon this principle, the ratio of increase of the population of England must be most materially diminished, by deducting the procreative result of a certain immigration of Normans, which took place some few hundred years since.

the British dominions in North America—from Ireland, 47,223; from England, 23,783; from Scotland, 19,971. Total of emigration to the British dominions, 90,977. Total of the emigrations from the United Kingdom, 159,965. This gives us an annual average of 6,898 emigrants to the United States; and this we take to be not far from the true average; for, if the above period embraces the years of the war, when there were no emigrations to this country, it likewise embraces the extraordinary years 1817 and 1818, when the emigrations were double or treble what they ever were before, or have been since. We should add about one ninth to the above amount for emigrants from other countries than Great Britain; for we take it that about nine tenths of all the foreigners who come to this country come from the United Kingdom, and we shall have an average of little more than 7,500 emigrants per annum. And whilst we thus find the documents of the British government and of our own coinciding so nearly, it is impossible to think that both are very far from the truth. The number of passengers arriving at the principal ports of the United States during the year 1817, as obtained from the records of the several custom-houses, was 22,240. If we make a proper deduction for the number of Americans who must have been among these passengers, we shall conclude that the number of emigrants for that year was about 18,000. The amount of emigration in the common years, we are of opinion, varies from six to eight thousand. If any thing be wanting to confirm the above statement, we may find it in the last census. The number of foreigners not naturalized is there given, and amounts only to 53,655. No foreigner can be naturalized until he has resided within the United States at least five years; and consequently we have the whole number which could have arrived during the five years preceding the census, even if we suppose that all who arrived before that period were naturalized as soon as the law would permit. But we know that a great many delay obtaining naturalization for several years after they are entitled to it; and not a few are never naturalized at all.”*

It will be observed that the North American Review allows no addition to the number of immigrants from those who emigrated to Canada, although on other occasions American writers do not hesitate to affirm, that the greater part of those who leave Great Britain professedly for the Canadas, ultimately settle in the United States; and we are inclined to think it very probable, that, whatever may be the case under

the present arrangements, one third of the persons emigrating to Canada between 1810 and 1820, settled in some of the states of the republic. This would raise the number who arrived in the United States from Great Britain alone to 12,000 per annum; and it is by no means impossible, that from other countries, or from sources not adequately ascertained, the total annual number of emigrants might have amounted to 20,000; but we cannot conceive it could much exceed that number. We are the more confirmed in this opinion, as it is sustained by the enumeration of the census of 1820, admitting the ratio of deaths to be one sixth in ten years. The total *free* population of the United States in 1810 was 6,049,539: had there been no deaths or immigrations, this number would, of course, have been the number of free persons above the age of ten years in 1820; deducting, however, according to our estimate, one sixth for deaths in ten years, or 1,008,256, it will leave 5,041,283, as the number of persons who would be above ten years old in 1820. The census of 1820, however, gives a total of free persons above ten years of age of 5,380,644, which indicates an addition of 339,361 by immigration alone, as between 1810 and 1820 there was no accession of territory, that of Louisiana having accrued before 1810, and Florida after 1820. Estimating the increase of the immigrant population at ten per cent. per annum, it would require more than 20,000 persons to have arrived annually in the United States from 1810 to 1820, a period which, though it includes some years in which the number probably exceeded that estimate considerably, yet it includes also the period of the war, during which little or no immigration could take place. We apprehend, therefore, that when we admit the immigration of 20,000 persons annually, it reaches the utmost limit of truth, allowing for those who may pass through Canada or the West Indies. The increase of free persons from 1810 to 1820 was 1,686,000: allowing, therefore, 340,000 for immigrants and their descendants, it would diminish the ratio of increase, as nearly as possible, one fifth, and would extend the period of duplication of the population by procreation alone, five years instead of four fifths of a year, as stated by Dr. Seybert; or, in other words, the period in which the population of the United States would naturally double itself, is reduced by immigration from thirty to twenty-five years. Mr. Sadler appears to think that population will not duplicate from procreation only, in the most favourable circumstances, in less than from forty-five to fifty years; and that the “law of population” is, that its ratio of increase diminishes as its number to the square mile increases; but

* North American Review, vol. xv. p. 301—305

he ratio of increase in the United States from 1820 to 1830 being greater than that from 1810 to 1820, appears to be irreconcilable with that position.

We have entered into this discussion not from any peculiar interest we feel in the Malthusian controversy, but because we deemed a consideration of it as essentially connected with the subject of American population. We are quite willing to admit, that in favourable circumstances population may double itself in thirty, or possibly in twenty-five years; but the fact is not to us a matter of regret, but of congratulation: the world is yet a wide waste, in comparison with the population it is capable of sustaining; and it is the disgrace of humanity, not the order of Providence, that men should have been continually engaged in destroying themselves by vice, or each other by war, instead of bringing into cultivation the beautiful plains with which the world abounds. We can not for one moment believe, that He who formed the earth, and hath "given it to the children of men," has established laws of human procreation incompatible with the dimensions and capabilities of the physical world; and entertaining no doubt that the earth is calculated to maintain a vastly greater population than has ever yet existed upon it, we can, with the utmost confidence, leave the ultimate result to the disposal of Almighty power and infinite wisdom, without attempting to contravene the laws of nature by the impotent arm of human legislation.*

In the census for 1830, a new and much more satisfactory division of the free white persons was adopted, than in any previous census, each sex being distributed into quinquennial divisions under twenty years, and into decennial classes from twenty to one hundred; but a different method was followed with respect to the free coloured persons and the slaves, each sex of these two classes being formed into six divisions. The number of white persons, and also the number of coloured persons who were deaf and dumb, were also stated; and each divided, according to age, into three classes; and the numbers of persons blind is also exhibited. This census, however, though the returns are now completed, has not yet been published, and the total number of each class throughout the United States is not yet made known;

* Mr. A. H. Everett, in his "New Ideas on Population," has most satisfactorily confuted the doctrine of population pressing on subsistence otherwise than from imperfect social institutions; and

we shall, therefore, present the details of the census of 1820, which supply many interesting particulars:

1.	Free white males under 10 years of age	1,345,220
2.	— of 10 and under 16	612,535
3.	— of 16 and under 26	776,150
4.	— of 26 and under 45	766,083
5.	— of 45 and upwards	495,065
6.	Free white females under 10 years	1,280,550
7.	— of 10 and under 16	605,348
8.	— of 16 and under 26	781,371
9.	— of 26 and under 45	736,600
10.	— of 45 and upwards	462,788
11.	males under 14 years	343,852
12.	— of 14 and under 26	203,088
13.	— of 26 and under 45	163,723
14.	— of 45 and upwards	77,365
15.	Slaves females under 14 years	324,344
16.	— of 14 and under 26	202,436
17.	— of 26 and under 45	152,693
18.	— of 45 and upwards	70,627
19.	males under 14 years	47,659
20.	— of 14 and under 26	24,048
21.	— of 26 and under 45	23,450
22.	— of 45 and upwards	17,613
23.	Free coloured persons females under 14 years	45,898
24.	— of 14 and under 26	28,800
25.	— of 26 and under 45	27,181
26.	— of 45 and upwards	18,881
27.	All other persons, except Indians, not taxed	4,631

Total 9,637,999

28.	Free white males between 16 and 18	182,205
29.	Foreigners not naturalized	53,687
30.	Number of persons engaged in agriculture	2,070,646
31.	— in commerce	72,493
32.	— in manufactures	349,506

The third table, annexed to this chapter, exhibits the number of persons, upwards of one hundred years old, distinguishing the whites, slaves, and free blacks. The whole number appears very large; but the great proportion of blacks, being four to one, will strike many with surprise: it is, however, to be observed that the ages of the blacks are not generally so accurately ascertained as those of the whites, and the proportion can not therefore be fully relied on.

Additional particulars, respecting the population of each state, will be given in the section of the work which treats of the states separately; and, in closing the department of statistics, it may be proper to remind our readers, that much important statistical information respecting manufactures and other subjects, will be found in connexion with individual states, which, as no collective statement exists, could not with propriety be introduced in this portion of the work.

Mr. Sadler has most ably and unanswerably demonstrated, that the "preventive check" recommended by Mr. Malthus is "unnatural, unlawful and wicked."

POPULATION.—TABLE I.

POPULATION OF THE UNITED STATES.

ACCORDING TO FIVE OFFICIAL ENUMERATIONS.

STATES and TERRITORIES.	1st Census. Pop. 1790.	2d Census. Pop. 1800.	3d Census. Pop. 1810.	4th Census. Pop. 1820.	5th Census. Pop. 1830.	Per Cent. 10 years.
Maine	96,540	151,719	228,705	298,335	399,462	33.9
New Hampshire	141,885	183,858	214,460	244,161	269,533	10.4
Vermont	86,539	154,465	217,895	235,764	280,679	19.0
Massachusetts	378,787	422,845	472,040	523,287	610,014	16.6
Rhode Island	68,825	69,122	76,931	83,059	97,210	17.0
Connecticut	237,946	251,002	261,942	275,248	297,711	8.2
New York	340,120	586,050	959,049	1,372,812	1,913,508	39.4
New Jersey	184,139	211,149	245,562	277,575	320,779	15.6
Pennsylvania	434,373	602,545	810,091	1,049,313	1,347,672	28.4
Delaware	59,096	64,273	72,674	72,749	76,739	5.5
Maryland	319,728	345,824	380,546	407,350	446,913	9.7
Virginia	747,610	880,200	979,622	1,065,366	1,211,272	13.7
North Carolina	393,951	478,103	565,500	638,829	738,470	15.6
South Carolina	249,073	345,591	415,115	502,741	581,458	15.7
Georgia	82,548	162,686	252,433	340,989	516,567	51.5
Alabama . . . . .	...	8,850	40,352	127,901	308,997	141.6
Mississippi . . . . .	...	...	...	75,448	136,806	80.1
Louisiana . . . . .	...	...	76,556	153,407	215,575	40.7
Tennessee . . . . .	...	105,602	261,727	420,813	684,822	62.7
Kentucky	73,677	220,959	406,511	564,317	688,844	22.1
Ohio . . . . .	...	45,365	230,760	581,434	937,679	61.2
Indiana . . . . .	...	4,651	24,520	147,178	341,582	132.1
Illinois . . . . .	...	215	12,282	55,211	157,575	185.4
Missouri . . . . .	...	...	19,783	66,586	140,074	110.4
Dis. of Columbia . . . . .	...	15,093	24,023	33,039	39,868	20.1
Michigan Ter. . . . .	...	551	4,762	8,896	31,260	250.1
Arkansas Ter. . . . .	...	...	1,062	14,273	30,383	113.3
Florida Ter. . . . .	...	...	...	...	34,729	...
Total	3,929,328	5,309,758	7,239,908	9,638,166	12,856,171	33.4

POPULATION.—TABLE II.

SLAVES IN THE UNITED STATES.

ACCORDING TO FIVE OFFICIAL ENUMERATIONS.

STATES and TERRITORIES.	Slaves. 1790.	Slaves. 1800.	Slaves. 1810.	Slaves. 1820.	Slaves. 1830.
Maine . . . . .	...	...	...	...	...
New Hampshire	158	8	...	...	...
Vermont	16	...	...	...	...
Massachusetts . . . . .	...	...	...	...	...
Rhode Island	948	380	108	48	14
Connecticut	2,764	951	310	97	23
New York	21,324	20,613	15,017	10,088	46
New Jersey	11,423	12,422	10,851	7,557	2,246
Pennsylvania	3,737	1,706	795	211	386
Delaware	8,887	6,153	4,177	4,509	3,305
Maryland	103,036	108,554	111,502	107,398	102,878
Virginia	292,627	346,968	392,518	425,153	469,724
North Carolina	100,572	133,296	168,824	205,017	246,462
South Carolina	107,094	146,151	196,365	258,475	315,665
Georgia	29,264	59,699	105,218	149,656	217,470
Alabama . . . . .	...	...	...	41,879	117,294
Mississippi . . . . .	...	3,489	17,088	32,814	65,659
Louisiana . . . . .	...	...	34,660	69,064	109,631
Tennessee . . . . .	...	13,584	44,535	80,107	142,382
Kentucky	12,430	40,343	80,561	126,732	165,350
Ohio	3,417	...	...	...	...
Indiana . . . . .	...	135	237	190	...
Illinois . . . . .	...	...	168	917	746
Missouri . . . . .	...	...	3,011	10,222	24,990
Dis. of Columbia . . . . .	...	...	5,395	6,377	6,060
Michigan Ter. . . . .	...	...	24	...	27
Arkansas Ter. . . . .	...	...	...	1,617	4,578
Florida Ter. . . . .	...	...	...	...	15,510
Total	697,697	896,849	1,191,364	1,538,061	2,010,436

POPULATION.—TABLE III.

SHOWING THE NUMBER OF PERSONS, OF THE SEVERAL CLASSES, WHO WERE ONE HUNDRED YEARS OLD AND UPWARDS, ACCORDING TO THE CENSUS OF 1830.

STATES AND TERRITORIES.	White		SLAVES.		FREE BLACKS.		TOTAL.
	Males.	Females.	Males.	Females.	Males.	Females.	
Maine	1	3	...	...	1	...	5
New Hampshire	3	5	...	...	1	5	15
Vermont	3	5	...	...	2	4	14
Massachusetts	1	2	...	...	5	4	12
Rhode Island . . . . .	...	...	...	...	3	2	5
Connecticut	4	3	...	...	2	11	30
New York	25	18	2	2	22	51	130
New Jersey	1	2	2	...	4	5	14
Pennsylvania	37	20	1	9	30	33	130
Delaware . . . . .	...	1	3	3	13	18	38
Maryland	7	17	50	53	40	86	262
Virginia	23	26	122	143	143	22	479
North Carolina	23	26	92	114	22	27	304
South Carolina	14	19	98	84	19	6	240
Georgia	13	22	105	78	11	6	236
Alabama	15	10	30	25	1	6	87
Mississippi . . . . .	...	2	23	21	1	...	47
Louisiana	9	1	37	39	11	28	125
Tennessee	39	27	59	34	7	6	172
Kentucky	27	11	45	49	17	17	166
Ohio	21	8	...	...	5	5	42
Indiana	10	2	...	...	2	5	19
Illinois	4	1	2	3	1	1	12
Missouri	2	2	41	2	2	2	51
District of Columbia	2	...	3	2	3	8	18
Florida Territory	1	...	...	...	1	...	2
Michigan Territory	1	...	...	...	...	...	1
Arkansas Territory	1	3	1	1	1	...	7
Total	297	234	717	852	382	359	2,654

BOOK IV.

STATE OF SOCIETY.

CHAPTER I.

POLITICAL INSTITUTIONS, AND JURISPRUDENCE.

IN former portions of this work, it has been attempted to exhibit clearly the bold and conscientious origin, the subsequent noble struggles, and the present prosperous condition, of the people of the United States of North America. The spirit of liberty has been shown to have been their unwearied attendant in all their changes; and, during a steady progress through difficulties which would have appalled any but the stoutest hearts, they have earned well the blessings of freedom, by duly estimating its cheering influence. A few pages only can be given to a notice, much too brief for the subject, of the constitutional and legal institutions of the country, which, under Providence, have made more than ten millions of men prosperous, by the rational freedom of their character.

The government in the United States is either that which is formed from the whole people, or those which are formed from the people of particular states. The general government, and those of the particular states, possess distinct constitutions; and each state, of course, possesses a constitution distinct from the others. No subject perhaps is more generally misunderstood, even in well-educated European society, than the nature of the general and state governments of the United States, and their relation to each other: the fact can not be stated too strongly, that the general government is answerable only for the exercise of those powers which have been delegated to it by the people of the respective states, and that only to the extent and within the limits prescribed by the terms of the compact. The most correct view of the constitution of the United States appears to us to

be that of a confederation of independent republics, who have thought proper, in addition to the usual character of confederations, to establish a general government, and to delegate to it such powers as render the several states, in their external policy, one nation; while, in the internal economy, the general government has only certain prescribed and limited powers, the several republics retaining to themselves all those powers, the delegation of which was not deemed necessary for the good of every state. It is, therefore, for instance, as unjust to reproach the northern and western states, which repudiate the system of slavery, with being accessory to its existence in the southern states, as it would be to impute the superstitions of Spain to the influence of England; the power to abolish slavery being one, the delegation of which, from the separate states to the general government, it has not been possible to procure, either at the formation of the original confederation, at the adoption of the present constitution, or at any subsequent period. The old colonies, indeed, were integral parts of one nation, composing the British empire; but that connexion being lost in 1776, a new and far less absolute union arose from the influence of those common interests and ancient feelings which survived the separation of the states from Great Britain.

The three great principles which now characterize the constitution of the general government, are, first, "the people of the United States,"* being the independent and equal source of all its powers;—secondly, the people at large, or the separate states, retaining all the powers which they have not conferred on the general government;—thirdly, the special powers thus conferred being set forth in instruments and articles, submitted to state conventions before being

* *Title to the Constitution of 1787*, p. 311. Whilst adopting the principle of the unity of the inhabitants of all the states as one people, a principle which appears to be justified by the original instruments of the confederation of even an earlier date, it is proper to mention, that an important party have maintained with great

force, that it was *assuming* a foundation of power necessarily subversive of public freedom, as well as of the just extent of the state sovereignties. See especially Mr. Henry's speech in 1787, in the *Debates of the Virginia Convention*, p. 36 and *Wirt's Life of Henry*, p. 265. *Pitkin*, vol. ii. p. 270.

ordained, and sanctioned by the direct consent of the people. The constitutions of the separate states are derived even more directly from the people, as the declared source of all authority, limited powers only being intrusted either to the general or to the state governments. Whilst also the vast majority* of the men, at the age of twenty-one, are consulted, in order to settle the limits of those powers, such as are not intrusted to the general or to the state governments remain unimpaired for individual and popular enjoyment.

Independently of these deep and firm foundations of the North American commonwealth, it possesses guarantees of happiness and stability, not easy to be enumerated.† Some of them are new, others are common to the Americans with many of their neighbours in both hemispheres; but the greater part are only the development of rights and powers well understood in England, and the more worthy of our careful examination and entire respect, as being the rights for which British patriots have long zealously contended. What, however, Englishmen claim often by obscure inferences and antiquarian research, has been in America cleared of all doubt, and set forth in express declarations. But the vigour and healthy character of the branch are unquestionable proofs of the intrinsic virtue of the parent stem, which, in reverence to our forefathers and in justice to our children, we are bound to train up to its true destination.

* From these colonies have, as it were, sprung a new race of men,—freemen,—who never saw a king, nor acknowledged an hereditary chief among them. If we cannot be called the cradle of nations, we have produced the seedlings and germs of the great changes in the world. Nurtured in the wilds, we were impatient of restraint; free among ourselves, we could not brook foreign encroachments of tyranny; and, with a spontaneous burst of resentment, the American people rushed to arms before they had calculated their strength, or examined the foundation of their hopes. Inured to hardships, and patient of labour, we have gone onward, from one degree of success to another, to our present high standing.

But little more than half a century ago, we had but a few institutions of learning in the country; now, they abound on the seaboard, and are growing up in the back country. In our time, where the Indians roamed, followed only by the straggling hunter from the abodes of the white man, you may now find extensive libraries, rich with the classics of ancient days and of modern times. The best authors of the times of Elizabeth and Anne are not unfrequently found, for the accommodation of travellers, in the hotels and steam-boats. Almost every flourishing town has its lyceum, associate library, literary club, and often its able and eloquent lecturer. These institutions claim no high literary or scientific honors,—shower down no degrees, such as are often given to dunces, as well as to intelligent and industrious students, in colleges; but they diffuse no small proportion of information throughout the land. They were founded precisely in the right time.

Within the last century, the different branches of science and literature have been arranged under well-defined heads, enabling the teacher to present his observations distinctly to his audience. Within that time, the science of chemistry, so useful to all, has been brought

The old guarantees are, amongst others, the general supremacy of law over all discretion;—the right to personal liberty;—freedom of speech, and kindred right of free printing;—the right of calling for special amendments of the law when defective, and that of seeking general amendments in the forms of the constitution when not adapted to their end—the public good;—the right to know the details of whatever concerns the people, and of assembling together to discuss these details; the power of resisting and correcting evil rulers, by indictment, by impeachment, and otherwise;—the right of having arms;—of sending representatives to consent to taxes and laws when needed;—and the direct responsibility of every man for his own acts, with the impossibility of a superior's instructions being admitted in bar of that responsibility. Such are the main objects common to both the English and the United States constitutions, however differently guarded in each.

The new guarantees of the public welfare peculiar to the United States are, such as a separation of the legislative, executive, and judicial authorities, more complete than in England; the degree of control possessed by the people, by frequent elections, either directly or indirectly, over all those authorities and public functionaries; rotation in office; the prohibition of orders of nobility; the substitution of a temporary president with narrow powers, for an hereditary king with limited authority; the abolition of the right of primogeniture; the absence generally† of

from chaos to marvellous light, and is now rapidly advancing with numberless beautiful creations. The study of chemistry has been as common as that of simple arithmetic. It enlightens the parlour, and from it the light is reflected to the kitchen, and every day comes home to us as a household divinity.—AM. EDITOR.

The second classes excluded are (to take Massachusetts for an example) Jews, and all other persons not being Christians. Before 1821, all but Protestants were excluded. In this year, Roman Catholics and other Christians were admitted; and a powerful party urged the propriety of removing all limitations of the same nature. It has been urged on this head, that any tests are repugnant to the constitution; and in North Carolina the legislature has so determined.—Governor Worthington's Speech on the Maryland Test Act. Baltimore, 1824.

The third classes are paupers, and persons under guardianship, together with convicts. Upon the propriety of exclusion of these classes, no difference of opinion seems to exist.

† It has not been attempted to enumerate all the rights which the American citizens claim; and it is believed that no full catalogue of them is any where to be found. The early patriots seem to have been apprehensive that a professed enumeration of all might be injurious in regard to such as, by insufficient care, should be omitted. In Virginia a minute list was prepared in 1788; and, like some of the state constitutions, contains most of what is essential to good government. See St. George Tucker's Blackstone, vol. i. p. 1; Appendix, p. 161, 1803; and Jackson's Constitutions, *passim*.

‡ Franchises, and corporate rights of an exclusive character, to a certain extent, are far from being unknown in the United States. A remarkable instance upon this head occurred lately in Connecticut. Two collegiate bodies had long supplied the wants of the

exclusive privileges; the absence of a national church and tithes; the establishment of the equality of all denominations of Christians; the admission of its being a public duty to educate the whole community; and the frequent reference of great affairs to the people in convention.

The constitution of the United States, formed in the way already stated, is a comparatively brief instrument, and too important to be offered in an abridged form; it is therefore given entire:—

WE, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America:—

ARTICLE I.

SECTION I.—All legislative powers herein granted shall be vested in a congress of the United States, which shall consist of a senate and house of representatives.

SECTION II.—1. The house of representatives shall be composed of members chosen every second year by the people of the several states; and the electors in each state shall have the qualifications requisite for electors of the most numerous branch of the state legislature.

2. No person shall be a representative who shall not have attained to the age of twenty-five years, and been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that state in which he shall be chosen.

3. Representatives and direct taxes shall be apportioned among the several states which may be included within this union, according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and excluding Indians not taxed, three fifths of all other persons. The actual enumeration shall be made within three years after the first meeting of the congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct. The number of representatives shall not exceed one for every thirty thousand; but each state shall have at least one representative; and until such enumeration shall be made, the state of New Hampshire shall be entitled to choose three; Massachusetts, eight; Rhode Island and Providence Plantations, one; Connecticut, five; New York, six; New Jersey, four; Pennsylvania, eight; Delaware, one; Maryland, six; Virginia, ten; North Carolina, five; South Carolina, five; and Georgia, three.

4. When vacancies happen in the representation from any state, the executive authority thereof shall issue writs of election to fill such vacancies.

district, when at length a third seemed desirable to many of the people. The old colleges were prone to think their long undisturbed priority had endowed them with exclusive rights; and they actually resisted the reasonable claim of a younger establishment, not without temporary success. Calm and vigorous discussions, however, convinced the state legislature that the new body was entitled to receive capacities similar to those which the others would fain have called privileges; and the third college now flourishes in all respects like its fellows, which it doubtless improves by the stimulus of its example. Had the case occurred when the state was only an English colony, the claim would probably have been refused. By the sixth article of the Massachusetts Declaration of Rights, it is settled, that no "corporation, or association of men, have any other title to obtain advantages, or particular and exclusive privileges, distinct from those of the community, than what arises from the consideration of services ren-

5. The house of representatives shall choose their speaker and other officers, and shall have the sole power of impeachment.

SECTION III.—1. The senate of the United States shall be composed of two senators from each state, chosen by the legislature thereof, for six years; and each senator shall have one vote.

2. Immediately after they shall be assembled, in consequence of the first election, they shall be divided as equally as may be into three classes. The seats of the senators of the first class shall be vacated at the expiration of the second year; of the second class, at the expiration of the fourth year; and of the third class, at the expiration of the sixth year; so that one third may be chosen every second year: and if vacancies happen by resignation, or otherwise, during the recess of the legislature of any state, the executive thereof may make temporary appointments until the next meeting of the legislature, which shall then fill such vacancies.

3. No person shall be a senator who shall not have attained to the age of thirty years, and been nine years a citizen of the United States, and who shall not, when elected, be an inhabitant of that state for which he shall be chosen.

4. The vice-president of the United States shall be president of the senate, but shall have no vote, unless they be equally divided.

5. The senate shall choose their other officers, and also a president *pro tempore*, in the absence of the vice-president, or when he shall exercise the office of president of the United States.

6. The senate shall have the sole power to try all impeachments: when sitting for that purpose, they shall be on oath or affirmation. When the president of the United States is tried, the chief justice shall preside; and no person shall be convicted without the concurrence of two thirds of the members present.

7. Judgment, in cases of impeachment, shall not extend further than to removal from office, and disqualification to hold and enjoy any office of honour, trust, or profit, under the United States; but the party convicted shall nevertheless be liable and subject to indictment, trial, judgment, and punishment, according to law.

SECTION IV.—1. The times, places, and manner of holding elections for senators and representatives, shall be prescribed in each state by the legislature thereof; but the congress may at any time, by law, make or alter such regulations, except as to the places of choosing senators.

2. The congress shall assemble at least once in every year, and such meeting shall be on the first Monday in December, unless they shall by law appoint a different day.

SECTION V.—1. Each house shall be the judge of the elections, returns, and qualifications of its own members, and a majority of each shall constitute a quorum, to do business; but a smaller number may adjourn from day to day, and may be authorized to compel the attendance of absent members, in such manner, and under such penalties, as each house may provide.

2. Each house may determine the rules of its proceedings, punish its members for disorderly behaviour, and, with the concurrence of two thirds, expel a member.

3. Each house shall keep a journal of its proceedings, and from time to time publish the same, excepting such parts as may, in their judgment, require secrecy; and the yeas and nays of the members of either house on any question, shall, at the desire of one fifth of those present, be entered on the journal.

dered to the public."—*Jackson's Constitutions of the States of America*, p. 41. In the convention of Massachusetts, of 1820, it was urged, that a clause for limiting the power of the legislature to incorporate only towns of 10,000 inhabitants, and upwards, was a breach of the foregoing article of the original Declaration of Rights. The limiting clause was, however, adopted, which, with other details too long for this place, prove that the principle of freedom, on the point of privilege, is not yet thoroughly acted upon in America. In the debate it was stated, in support of the clause alluded to, that the application of "a little clump of Indians" for city privileges, in addition to numerous applications of others for the like powers, caused the legislature of Connecticut to cease granting them, as being inconvenient. Such arguments led 223 members of the convention to make the law exclusive.—*Journal of Proceedings in the Convention to revise the Constitution of Massachusetts*, 1820, p. 99.

4. Neither house, during the session of congress, shall, without the consent of the other, adjourn for more than three days, or to any other place than that in which the two houses shall be sitting.

SECTION VI.—1. The senators and representatives shall receive a compensation for their services, to be ascertained by law, and paid out of the treasury of the United States. They shall in all cases, except treason, felony, and breach of the peace, be privileged from arrest during their attendance at the session of their respective houses, and in going to and returning from the same; and for any speech or debate in either house, they shall not be questioned in any other place.

2. No senator or representative shall, during the time for which he was elected, be appointed to any civil office under the authority of the United States, which shall have been created, or the emoluments whereof shall have been increased during such time; and no person holding any office under the United States, shall be a member of either house during his continuance in office.

SECTION VII.—1. All bills for raising revenue shall originate in the house of representatives; but the senate may propose or concur with amendments as on other bills.

2. Every bill which shall have passed the house of representatives and the senate, shall, before it become a law, be presented to the president of the United States: if he approve, he shall sign it; but if not, he shall return it, with his objections, to that house in which it shall have originated, who shall enter the objections at large on their journal, and proceed to reconsider it. If, after such reconsideration, two thirds of that house shall agree to pass the bill, it shall be sent, together with the objections, to the other house, by which it shall likewise be reconsidered, and if approved by two thirds of that house, it shall become a law. But in all such cases, the votes of both houses shall be determined by yeas and nays, and the names of the persons voting for and against the bill shall be entered on the journal of each house respectively. If any bill shall not be returned by the president within ten days (Sundays excepted) after it shall have been presented to him, the same shall be a law, in like manner as if he had signed it, unless the congress, by their adjournment, prevent its return, in which case it shall not be a law.

3. Every order, resolution, or vote, to which the concurrence of the senate and house of representatives may be necessary, (except on a question of adjournment,) shall be presented to the president of the United States; and before the same shall take effect, shall be approved by him; or, being disapproved by him, shall be re-passed by two thirds of the senate and house of representatives, according to the rules and limitations prescribed in the case of a bill.

SECTION VIII.—The congress shall have power,

1. To lay and collect taxes, duties, imposts, and excises, to pay the debts and provide for the common defence and general welfare of the United States; but all duties, imposts, and excises, shall be uniform throughout the United States:

2. To borrow money on the credit of the United States:

3. To regulate commerce with foreign nations, and among the several states, and with the Indian tribes:

4. To establish a uniform rule of naturalization, and uniform laws on the subject of bankruptcies throughout the United States:

5. To coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures:

6. To provide for the punishment of counterfeiting the securities and current coin of the United States:

7. To establish post-offices and post-roads:

8. To promote the progress of science and useful arts, by securing, for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries:

9. To constitute tribunals inferior to the supreme court:

10. To define and punish piracies and felonies committed on the high seas, and offences against the law of nations:

11. To declare war, grant letters of marque and reprisal, and make rules concerning captures on land and water:

12. To raise and support armies; but no appropriations of money to that use shall be for a longer term than two years:

13. To provide and maintain a navy:

14. To make rules for the government and regulation of the land and naval forces:

15. To provide for calling forth the militia to execute the laws of the union, suppress insurrections, and repel invasions:

16. To provide for organizing, arming, and disciplining the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the states respectively the appointment of the officers, and the authority of training the militia according to the discipline prescribed by congress:

17. To exercise exclusive legislation, in all cases whatsoever, over such district (not exceeding ten miles square) as may by cession of particular states, and the acceptance of congress, become the seat of the government of the United States; and to exercise like authority over all places purchased by the consent of the legislature of the state in which the same shall be, for the erection of forts, magazines, arsenals, dock-yards, and other needful buildings:—and,

18. To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this constitution in the government of the United States, or in any department or officer thereof.

SECTION IX.—1. The migration or importation of such persons as any of the states now existing shall think proper to admit, shall not be prohibited by the congress prior to the year one thousand eight hundred and eight; but a tax or duty may be imposed on such importation, not exceeding ten dollars for each person.

2. The privilege of the writ of *habeas corpus* shall not be suspended, unless when, in cases of rebellion or invasion, the public safety may require it.

3. No bill of attainder or *ex post facto* law shall be passed.

4. No capitation or other direct tax shall be laid, unless in proportion to the *census* or enumeration herein before directed to be taken.

5. No tax or duty shall be laid on articles exported from any state.

6. No preference shall be given by any regulation of commerce or revenue to the ports of one state over those of another: nor shall vessels bound to, or from, one state, be obliged to enter, clear, or pay duties in another.

7. No money shall be drawn from the treasury, but in consequence of appropriations made by law; and a regular statement and account of the receipts and expenditures of all public money shall be published from time to time.

8. No title of nobility shall be granted by the United States: and no person holding any office of profit or trust under them, shall, without the consent of the congress, accept of any present, emolument, office, or title, of any kind whatever, from any king, prince, or foreign state.

SECTION X.—1. No state shall enter into any treaty, alliance, or confederation; grant letters of marque and reprisal; coin money; emit bills of credit; make any thing but gold and silver coin a tender in payment of debts; pass any bill of attainder, *ex post facto* law, or law impairing the obligation of contracts; or grant any title of nobility.

2. No state shall, without the consent of the congress, lay any imposts or duties on imports or exports, except what may be absolutely necessary for executing its inspection laws; and the net produce of all duties and imposts, laid by any state on imports or exports, shall be for the use of the treasury of the United States; and all such laws shall be subject to the revision and control of the congress.

3. No state shall, without the consent of the congress, lay any duty of tonnage, keep troops or ships of war in time of peace, enter into any agreement or compact with another state, or with a foreign power, or engage in war, unless actually invaded, or in such imminent danger as will not admit of delay.

ARTICLE II.

SECTION I.—1. The executive power shall be vested in a president of the United States of America. He shall hold his office during the term of four years, and, together with the vice-president, chosen for the same term, be elected as follows:—

2. Each state shall appoint, in such manner as the legislature thereof may direct, a number of electors, equal to the whole number of senators and representatives to which the state may be enti

fled in the congress: but no senator or representative, or person holding an office of trust or profit under the United States, shall be appointed an elector.*

3. The congress may determine the time of choosing the electors, and the day on which they shall give their votes; which day shall be the same throughout the United States.

4. No person, except a natural-born citizen, or a citizen of the United States at the time of the adoption of this constitution, shall be eligible to the office of president; neither shall any person be eligible to that office who shall not have attained to the age of thirty-five years, and been fourteen years a resident within the United States.

5. In case of the removal of the president from office, or of his death, resignation, or inability to discharge the powers and duties of the said office, the same shall devolve on the vice-president; and the congress may, by law, provide for the case of removal, death, resignation, or inability, both of the president and vice-president, declaring what officer shall then act as president, and such officer shall act accordingly, until the disability be removed, or a president shall be elected.

6. The president shall, at stated times, receive for his services a compensation, which shall neither be increased nor diminished during the period for which he shall have been elected; and he shall not receive, within that period, any other emolument from the United States, or any of them.

7. Before he enter on the execution of his office, he shall take the following oath or affirmation:—"I do solemnly swear (or affirm) that I will faithfully execute the office of president of the United States, and will, to the best of my ability, preserve, protect, and defend the constitution of the United States.

SECTION II.—1. The president shall be commander in chief of the army and navy of the United States, and of the militia of the several states, when called into the actual service of the United States; he may require the opinion, in writing, of the principal officer in each of the executive departments, upon any subject relating to the duties of their respective offices, and he shall have power to grant reprieves and pardons for offences against the United States, except in cases of impeachment.

2. He shall have power, by and with the advice and consent of the senate, to make treaties, provided two thirds of the senators present concur; and he shall nominate, and, by and with the advice and consent of the senate, shall appoint ambassadors, other public ministers, and consuls, judges of the supreme court, and all other officers of the United States, whose appointments are not herein otherwise provided for, and which shall be established by law: but the congress may, by law, vest the appointment of such inferior officers as they think proper, in the president alone, in the courts of law, or in the heads of departments.

3. The president shall have power to fill up all vacancies that may happen during the recess of the senate, by granting commissions, which shall expire at the end of their next session.

SECTION III.—He shall, from time to time, give to the congress information of the state of the union, and recommend to their consideration such measures as he shall judge necessary and expedient; he may, on extraordinary occasions, convene both houses, or either of them, and in case of disagreement between them, with respect to the time of adjournment, he may adjourn them to such time as he shall think proper; he shall receive ambassadors and other public ministers; he shall take care that the laws be faithfully executed, and shall commission all the officers of the United States.

SECTION IV.—The president, vice-president, and all civil officers of the United States, shall be removed from office on impeachment for, and conviction of, treason, bribery, or other high crimes and misdemeanours.

ARTICLE III.

SECTION I.—The judicial power of the United States shall be vested in one supreme court, and in such inferior courts as the congress may, from time to time, ordain and establish. The

judges, both of the supreme and inferior courts, shall hold their offices during good behaviour, and shall, at stated times, receive for their services a compensation, which shall not be diminished during their continuance in office.

SECTION II.—1. The judicial power shall extend to all cases, in law and equity, arising under this constitution, the laws of the United States, and treaties made, or which shall be made, under their authority;—to all cases affecting ambassadors, other public ministers, and consuls;—to all cases of admiralty and maritime jurisdiction;—to controversies to which the United States shall be a party;—to controversies between two or more states;—between a state and citizens of another state;—between citizens of different states;—between citizens of the same state claiming lands under grants of different states, and between a state or the citizens thereof, and foreign states, citizens, or subjects.

2. In all cases affecting ambassadors, other public ministers, and consuls, and those in which a state shall be party, the supreme court shall have original jurisdiction. In all the other cases before mentioned, the supreme court shall have appellate jurisdiction, both as to law and fact, with such exceptions, and under such regulations, as the congress shall make.

3. The trial of all crimes, except in cases of impeachment, shall be by jury; and such trial shall be held in the state where the said crimes shall have been committed; but when not committed within any state, the trial shall be at such place or places as the congress may by law have directed.

SECTION III.—1. Treason against the United States shall consist only in levying war against them, or in adhering to their enemies, giving them aid and comfort.

2. No person shall be convicted of treason unless on the testimony of two witnesses to the same overt act, or on confession in open court.

3. The congress shall have power to declare the punishment of treason, but no attainder of treason shall work corruption of blood, or forfeiture, except during the life of the person attainted.

ARTICLE IV.

SECTION I.—Full faith and credit shall be given in each state to the public acts, records, and judicial proceedings of every other state. And the congress may, by general laws, prescribe the manner in which such acts, records, and proceedings, shall be proved, and the effect thereof.

SECTION II.—1. The citizens of each state shall be entitled to all privileges and immunities of citizens in the several states.

2. A person charged in any state with treason, felony, or other crime, who shall flee from justice, and be found in another state, shall, on demand of the executive authority of the state from which he fled, be delivered up, to be removed to the state having jurisdiction of the crime.

3. No person held to service or labour in one state, under the laws thereof, escaping into another, shall, in consequence of any law or regulation therein, be discharged from such service or labour, but shall be delivered up on claim of the party to whom such service or labour may be due.

SECTION III.—1. New states may be admitted by the congress into this union: but no new state shall be formed or erected within the jurisdiction of any other state; nor any state be formed by the junction of two or more states, or parts of states, without the consent of the legislatures of the states concerned, as well as of the congress.

2. The congress shall have power to dispose of and make needful rules and regulations respecting the territory or other property belonging to the United States; and nothing in this constitution shall be so construed as to prejudice any claims of the United States, or of any particular state.

SECTION IV.—The United States shall guarantee to every state in this union a republican form of government, and shall protect each of them against invasion; and, on application of the legislature, or of the executive, (when the legislature can not be convened,) against domestic violence.

persued by Article XII. of the Amendments, it is unnecessary to insert it.

* A long clause, regulating the proceedings at the election of president and vice-president, was here introduced; but as it is su-

ARTICLE V.

The congress, whenever two thirds of both houses shall deem it necessary, shall propose amendments to this constitution, or, on the application of the legislatures of two thirds of the several states, shall call a convention for proposing amendments, which, in either case, shall be valid to all intents and purposes, as part of this constitution, when ratified by the legislatures of three fourths of the several states, or by conventions in three fourths thereof, as the one or the other mode of ratification may be proposed by the congress; provided that no amendment, which may be made prior to the year one thousand eight hundred and eight, shall in any manner affect the first and fourth clauses in the ninth section of the first article; and that no state, without its consent, shall be deprived of its equal suffrage in the senate.

ARTICLE VI.

1. All debts contracted, and engagements entered into, before the adoption of this constitution, shall be as valid against the United States, under this constitution, as under the confederation.

2. This constitution, and the laws of the United States, which shall be made in pursuance thereof, and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land; and the judges in every state shall be bound thereby, any thing in the constitution or laws of any state to the contrary notwithstanding.

3. The senators and representatives before mentioned, and the members of the several state legislatures, and all executive and judicial officers, both of the United States and of the several states, shall be bound by oath or affirmation to support this constitution; but no religious test shall ever be required as a qualification to any office or public trust under the United States.

ARTICLE VII.

The ratification of the conventions of nine states shall be sufficient for the establishment of this constitution between the states so ratifying the same.

AMENDMENTS*

TO THE CONSTITUTION OF THE UNITED STATES, RATIFIED ACCORDING TO THE PROVISIONS OF THE FIFTH ARTICLE OF THE FOREGOING CONSTITUTION.

ARTICLE I.—Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

ARTICLE II.—A well-regulated militia being necessary to the security of a free state, the right of the people to keep and bear arms shall not be infringed.

ARTICLE III.—No soldier shall, in time of peace, be quartered in any house, without the consent of the owner, nor in time of war, but in a manner to be prescribed by law.

ARTICLE IV.—The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the person or things to be seized.

ARTICLE V.—No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment

of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of war or public danger; nor shall any person be subject, for the same offence, to be twice put in jeopardy of life or limb; nor shall be compelled, in any criminal case, to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

ARTICLE VI.—In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the state and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favour, and to have the assistance of counsel for his defence.

ARTICLE VII.—In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved; and no fact tried by a jury shall be otherwise re-examined in any court of the United States, than according to the rules of the common law.

ARTICLE VIII.—Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

ARTICLE IX.—The enumeration in the constitution of certain rights shall not be construed to deny or disparage others retained by the people.

ARTICLE X.—The powers not delegated to the United States by the constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people.

ARTICLE XI.—The judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by citizens of another state, or by citizens or subjects of any foreign state.

ARTICLE XII.—The electors shall meet in their respective states, and vote by ballot for president and vice-president, one of whom, at least, shall not be an inhabitant of the same state with themselves; they shall name in their ballots the person voted for as president; and, in distinct ballots, the person voted for as vice-president; and they shall make distinct lists of all persons voted for as president, and of all persons voted for as vice-president, and of the number of votes for each, which lists they shall sign and certify, and transmit, sealed, to the seat of the government of the United States, directed to the president of the senate. The president of the senate shall, in the presence of the senate and house of representatives, open all the certificates, and the votes shall then be counted;—the person having the greatest number of votes for president shall be the president, if such number be a majority of the whole number of electors appointed; and if no person have such majority, then from the persons having the highest numbers, not exceeding three, on the list of those voted for as president, the house of representatives shall choose immediately, by ballot, the president. But in choosing the president, the votes shall be taken by states, the representation from each state having one vote; a quorum for this purpose shall consist of a member or members from two thirds of the states, and a majority of all the states shall be necessary to a choice. And if the house of representatives shall not choose a president, whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the vice-president shall act as president, as in the case of the death or other constitutional disability of the president. The person having the greatest number of votes as vice-president, shall be the vice-president, if such number be a majority of the whole number of electors appointed; and if no person have a majority, then from the two highest numbers on the list the senate shall choose the vice-president; a quorum for the purpose shall consist

* Congress, at their first session under the constitution, held in the city of New York, in 1789, proposed to the legislatures of the several states twelve amendments, ten of which only were adopted. They are the first ten of the amendments in the text; and they were ratified by three fourths, the constitutional number of the states, on the 15th of December, 1791. The eleventh amendment was proposed at the first session of the third congress, and was de-

clared in a message from the president of the United States to both houses of congress, dated the 8th of January, 1798, to have been adopted by the constitutional number of states. The twelfth amendment, which was proposed at the first session of the eighth congress, was adopted by the constitutional number of states in the year 1804, according to a public notice by the secretary of state, dated the 25th of September, 1804.

of two thirds of the whole number of senators, and a majority of the whole number shall be necessary to a choice. But no person

* In the first volume of this History will be found copies of the other instruments, which may be considered the foundations of the present constitution; in page 216 is the Declaration of Rights and Grievances of 1774; in page 242 is the Declaration of Independence of 1776; and in page 270 is a summary of the Articles of Confederation of 1777; but the constitution set forth in the text is now that of the union. Those of the separate states may be understood generally by the examples of Virginia and Mississippi.

VIRGINIA.

The constitution of this state, which has hitherto, since its first adoption, been in operation, was formed in 1776; but on the first Monday in October, 1829, a convention met at Richmond, "to consider, discuss, and propose a new constitution, or alterations and amendments to the existing constitution;" and on the 14th of January, 1830, the convention adopted an amended constitution, by a vote of fifty-five to forty. The amended constitution, on being submitted to the legal voters of the state, was ratified by a majority of 10,492 votes, as appears by the following statement:—

	For.	Against.
Votes in Trans-Alleghany district . .	2,123	11,289
Valley district	3,842	2,097
Middle district	12,417	1,086
Tide-water district	7,673	1,091
	26,055	15,563

By this constitution the legislative power is vested in a senate and a house of delegates, which are together styled "The General Assembly of Virginia." The house of delegates consists of 134 members, chosen annually; thirty-one from the twenty-six counties west of the Alleghany Mountains; twenty-five from the fourteen counties between the Alleghany Mountains and the Blue Ridge; forty-two from the twenty-nine counties east of the Blue Ridge and above Tide-water; and thirty-six from the counties, cities, towns, and boroughs, lying upon Tide-water. The senate consists of thirty-two members, thirteen from the counties west of the Blue Ridge, and nineteen from the counties, cities, towns, and boroughs, east thereof. The senators are elected for four years; and the seats of one fourth of them are vacated every year. In all elections to any office or place of trust, honour, or profit, the votes are given openly, or *viva voce*, and not by ballot. A reapportionment for representation in both houses is to take place every ten years, commencing in 1841, until which time there is to be no change in the number of delegates and senators from the several divisions; and after 1841 the number of delegates is never to exceed 150; nor that of the senators 36.

"The executive power is vested in a governor elected by the joint vote of the two houses of the general assembly. He holds his office three years, commencing on the 1st of January next succeeding his election, or on such other day as may be, from time to time, prescribed by law; and he is ineligible for the three years next after the expiration of his term of office. There is a council of state, consisting of three members, elected for three years by the joint vote of the two houses; the seat of one being vacated annually. The senior counsellor is lieutenant-governor. The judges of the supreme court of appeals, and of the superior courts, are elected by a joint vote of both houses of the general assembly, and hold their offices during good behaviour, or until removed by a concurrent vote of both houses; but two thirds of the members present must concur in such vote, and the cause of removal be entered on the journals of each house.

"The right of suffrage is extended to every white male citizen of the commonwealth resident therein, aged twenty-one years and upwards, who is qualified to exercise the right of suffrage according to the former constitution and laws; or who owns a freehold of the value of twenty-five dollars; or who has a joint interest to the amount of twenty-five dollars in a freehold; or who has a life estate in, or reversionary title to, land of the value of fifty dollars, having

constitutionally ineligible to the office of president, shall be eligible to that of vice-president of the United States.*

been so possessed for six months; or who shall own and be in the actual occupation of a leasehold estate, having the title recorded two months before he shall offer to vote, of a term originally not less than five years, and of the annual value or rent of 200 dollars; or who, for twelve months before offering to vote, has been a house-keeper and head of a family, and shall have been assessed with a part of the revenue of the commonwealth within the preceding year, and actually paid the same.

"Executive government.—Governor, salary, 3,333 1-3 dollars per annum; lieutenant-governor and president of the council, and seven counsellors, 8,000 dollars; clerk of the council and keeper of the public seal, 1,320 dollars; assistant clerk of the council, 1,000 dollars; attorney-general, 1,000 dollars; treasurer of state, 2,000 dollars; auditor, 2,000 dollars; second auditor, 1,800 dollars; register of the land office, 1,500 dollars; keeper of the penitentiary, 2,000 dollars; penitentiary store-keeper, 1,500 dollars; adjutant-general, 500 dollars.

"The number of members of the existing senate is twenty-four; and of the house of delegates two hundred and fourteen, two from each of the one hundred and five counties, and one from each of the two cities and two boroughs. The senators and delegates receive four dollars a day, and twenty cents a mile for travel; the speaker of each house, eight dollars a day.

"Judiciary.—The offices of all the following judges of the supreme court of appeals, of the general court, and of the superior courts of chancery, will expire at the termination of the session of the first legislature under the new constitution. Supreme court of appeals,—five judges, 2,500 dollars each. Superior courts of chancery,—four judges, 1,667 dollars each. Fifteen judges of the general court, who are also judges of the superior courts of law held in each county: these judges receive each a salary of 1,500 dollars, and three dollars for every twenty miles travel on the circuit."

MISSISSIPPI.

The constitution of this state was formed at the town of Washington, in August, 1817. "The legislative power is vested in a senate and a house of representatives, which are together styled 'The General Assembly of the State of Mississippi.' The representatives are elected annually on the first Monday in August, in the ratio of one to every 3,000 white inhabitants. Each county, however, is entitled to one; and the present whole number is thirty-three. According to the constitution, when the number of white inhabitants exceeds 80,000, the number of representatives can not be less than thirty-six, nor more than one hundred. The members of the senate are elected for three years, one third being chosen annually. Their number can not be less than one fourth, nor more than one third of the whole number of representatives.

"The executive power is vested in a governor, who is elected by the people for two years, on the first Monday in August. At every election of a governor, a lieutenant-governor is also chosen, who is president of the senate, and on whom the executive duties devolve in case of the death, resignation, or absence, of the governor.

"The general assembly meets at Jackson, annually, on the first Monday in November.

"The right of suffrage is granted to every free white male citizen of the United States, of the age of twenty-one years or upwards, who has resided within this state one year next preceding an election, and the last six months within the county, city, or town, in which he offers to vote, and is enrolled in the militia thereof, unless exempted by law from military service; or, having the aforesaid qualifications of citizenship and residence, has paid a state or county tax.

"The judicial power is vested in a supreme court, and such superior and inferior courts of law and equity, as the legislature may from time to time establish. The judges of the several courts are elected by the general assembly, and hold their offices during good behaviour, until the age of sixty-five years.

"Executive government.—Governor's salary, 2,500 dollars; lie-

The originators of the Constitution are the people, by direct votes given upon resolutions prepared by their delegates in convention; a term with which the reader of this history is familiar; but of which the precise import upon the present occasion deserves further remark. Conventions, then, in this sense, are the supreme and primary assemblies of the people in the several states, which have for their rule only the public will, and for their objects justice and the public good. Like the merely voluntary meeting of the people—the *conventus publicos propria auctoritate* of England of the twelfth century—they originate in the old common law; but they are much more regular in form, although not more legal or important, than voluntary meetings of the people for less momentous purposes. When experience suggests that the constitution wants amendment, the subject is referred to conventions. The legislature (we speak of Massachusetts, in 1820, by way of example) pass a law, that inhabitants qualified to vote for the senators and representatives shall assemble in regular town meetings on a certain day, and give their votes by ballot on this question—"Is it expedient that delegates should be chosen to meet in convention for

tenant-governor's pay, six dollars a day during the session of the legislature; secretary of state's salary, 1,200; state treasurer, 1,000 dollars; auditor of public accounts, 1,000 dollars; attorney-general, 1,000 dollars.

"*Judiciary.*—Court of chancery: chancellor's salary, 2,000 dollars. Supreme court: chief justice, and four associate justices, 2,000 dollars each. Circuit courts: the state is divided into five districts, in which the judges of the supreme court severally hold circuit courts. These courts have original jurisdiction in all cases where the sum in dispute exceeds fifty dollars; and appellate jurisdiction from the courts of the justices of the peace, when the sum exceeds twenty dollars. They are also invested with criminal jurisdiction, except in the county of Adams, which has a court exclusively of criminal jurisdiction: judge's salary, 800 dollars. Probate and county courts: there are, in every county, a probate court and a county court, the judges of which have no salary, but are paid by fees, and by an allowance of three dollars a day. The county court is composed of three judges, of which the probate judge is the presiding justice. The court has jurisdiction over all offences committed by slaves; and for such trials it is invested with the powers which usually belong to courts of oyer and terminer. It has appellate jurisdiction from the courts of the justices of the peace, when the sum involved does not exceed twenty dollars."

DEPENDANT TERRITORIES.

With respect to the vast territories belonging to the United States,—territories not formed into states, and which are not yet distinct societies, known to the constitution as separate states,—congress has assumed to exercise supreme sovereignty over them, until the means of internal organization as states exist there. In the Arkansas territory, for example, the governor and judges are appointed by the president and senate, but they are removable at the pleasure of the president; and the judges, subject to such removal, hold office for four, and the governor for three years. A legislative body, composed of nine counsellors appointed by the president and senate of the United States, to continue in office for five years; and of a house of representatives, to be chosen by the inhabitants every two years, was provided by congress in 1820. The superior court of justice has exclusive cognizance of all capi-

tal offences, and trial by jury is secured, together with many of the other great fundamental principles of civil liberty. The local legislatures of these territories are prohibited from interfering with the primary disposal of the soil by the United States, or from taxing lands belonging to the United States, or the lands of absentees, higher than those of residents, or from interrupting the navigable waters flowing into the Mississippi and Missouri rivers. It is held that congress has supreme power in the government of these territories, depending on the exercise of its sound discretion; and if the government of the United States should carry into execution the project of colonizing the great valley of the Oregon to the west of the Rocky Mountains, the civil and political destiny of this country will afford a subject of grave consideration.—*Chancellor Kent's Commentaries.*

And if the majority of votes is in favour of choosing delegates, the inhabitants entitled to vote for representatives to the legislature shall elect delegates to take into consideration the propriety of making any and what amendments in the constitution; and such amendments shall be submitted to the people for their adoption, in such manner as the convention direct; and if ratified by the people, the constitution shall be deemed to be amended accordingly; and if not so ratified, the present constitution shall remain. (Act of the Commonwealth of Massachusetts, June 16, 1820.) Under this act, delegates met on the 15th of November in the same year, and resolved to abolish the old property qualification of electors of representatives; to extend to militia soldiers under twenty-one years of age the right of voting for their ensigns, lieutenants, and captains;—to render more complete the separation of the judicial, executive, and legislative authorities;—and to make other important changes. The proposed amendments were then referred to the people, who discussed them over again in their respective townships. Of the fourteen articles thus presented to their consideration, five

tal offences, and trial by jury is secured, together with many of the other great fundamental principles of civil liberty. The local legislatures of these territories are prohibited from interfering with the primary disposal of the soil by the United States, or from taxing lands belonging to the United States, or the lands of absentees, higher than those of residents, or from interrupting the navigable waters flowing into the Mississippi and Missouri rivers. It is held that congress has supreme power in the government of these territories, depending on the exercise of its sound discretion; and if the government of the United States should carry into execution the project of colonizing the great valley of the Oregon to the west of the Rocky Mountains, the civil and political destiny of this country will afford a subject of grave consideration.—*Chancellor Kent's Commentaries.*

The adoption of foreign states, upon equal and constitutional terms, into the old union, is an interesting and novel illustration of the success of the American polity, which was applied with great advantage upon the acquisition of Louisiana. When that country was purchased, a great problem presented itself, which it was necessary for the government and the people of the United States, and the inhabitants of Louisiana, to meet. Although France sold the country, it is plain that, on American principles, the United States could acquire no rights, under the purchase, except against France and other powers, admitting the right of a mother country to transfer the jurisdiction of a colony. It was the opinion of Mr. Jefferson and his cabinet, that it was necessary for the people of Louisiana to do some act expressive of their willingness to join the American people: this was, however, superseded by the obvious good will and predisposition of the population; and the momentous result of transferring all Louisiana, an empire in itself, from one jurisdiction to another, was unattended by the slightest violence, and has been succeeded by daily increasing satisfaction.

Had the comprehensive character of our work permitted it, we should have presented a sketch of the constitution of each state, and have exhibited the points in which they differ. Any of our readers who may wish to ascertain minutely the constitutions of the other states, can refer to the tables in the *Encyclopædia Americana*, vol. iii. art. CONSTITUTIONS, or to the *Companion to the British Almanac* for 1832.

were rejected. The debates of the convention were published, and distributed from day to day with great care throughout the state; and the whole business occupied about six months.*

The earliest convention of which we read in the history of North America was formed directly upon the model of that of England in 1689. When the intelligence of the Revolution reached Boston, the people rose in mass, and imprisoned an unpopular governor. A small body of the principal inhabitants took upon themselves the government, under the title of "A Council for the Safety of the People and Conservation of the Peace;" and, in imitation of the convention called by the Prince of Orange, recommended to the several towns in the colony to meet and depute persons to form an assembly. Of this event, the governor of Connecticut says, in a contemporary letter, "The true grounds of the procedure of the colony in assuming the government was, *salus populi est suprema lex*." The king soon signified the royal approbation of what had been done, recognizing, in his letters to the council, the convention of the representation of the people of the colony. In this case, at the privy council, Sir John Somers, then the counsel for the people upon a petition, said, "The country, oppressed by an arbitrary government, did there as we did here—rose as one man." One of the council remarked in this case, "I perceive the revolution was there as it was here—by the unanimous agreement of the people."†

* Debates and Proceedings in the Massachusetts Convention of 1820. 8vo. Boston, 1821.

† Hutchinson's History of Massachusetts Bay, vol. i. pp. 373—394.

‡ The due limits of constructive powers have been the occasion of anxious discussion. It has been strongly contended, that no implied powers were given to the federal government; for which position, the following solemn declaration by members of the convention of 1787, are relied upon:—"In the convention of Massachusetts, at which were present the two members from that state who signed the constitution, the first amendment proposed, in order to remove the fears of many, and more effectually guard against an undue administration of the federal government, is in these terms:—That it be explicitly declared, that all powers not expressly delegated by the aforesaid constitution, are reserved to the several states, to be by them exercised." (*Debates of the Convention of Massachusetts, Boston, 1788, p. 211.*) In the legislature of South Carolina, to which the constitution was sent, in order to be referred to a convention of the people, one of her delegates in the general convention, in explaining the views of the convention, and the objects of the constitution, uses these expressions:—"The distinction often taken between the nature of a federal and state government appeared to be conclusive; that in the former, no powers could be executed or assumed but such as were expressly delegated." (*Debates in the House of Representatives of South Carolina, Charleston, 1788, p. 7.*) General Pinckney, also a member of the general convention, thus expresses himself:—"It is admitted on all hands, that the general government has no powers but those which are expressly granted by the constitution; and that all rights not expressed, were reserved by the several states." (*Ibid.* p. 25.) And again, when replying to some one who had remark-

The constituency who choose the delegates for a convention is almost always the same constituency who choose the members of the state legislature; but it seems to be open to discretion to make this occasional constituency even more extensive. A great peculiarity, however, of the character of conventions, is, that the delegates may be individuals from any class, including the ministers of religion, the governor, and other public functionaries, and the judges. In this point the reader will be struck with the resemblance it bears to the English county meetings, where peers, and commoners, and clergy, and all other men, assemble to deliberate on any public concerns. Both institutions, indeed, are traceable to a common Saxon stock. The experience of the Americans, however, is fast giving a new and fixed character to these important organs of the popular will. Frequent resort to the true source of national power has rendered that resort regular and easy; and by bringing the real sovereign, the people, into view and activity without confusion, promises to advance the public interests on a scale hitherto unknown, and scarcely anticipated by the most sanguine lovers of good government.

The constitution being so settled, the general government cannot exercise any powers not given either expressly, or by the implication† necessary to the execution of the express powers. The powers vested in the state governments by their respective constitutions, or remaining with the people of the several

ed that the liberty of the press had not been secured, he adds,— "The general government has no powers but what are expressly granted to it; it therefore has no power to take away the liberty of the press; that invaluable blessing is secured by all our state constitutions; and to have mentioned it in our general constitution, would, perhaps, furnish an argument hereafter, that the general government had a right to exercise powers not expressly delegated to it. For the same reason, we had no bill of rights inserted in our constitution; for as we might perhaps have omitted the enumeration of some of our rights, it might hereafter be said, we had delegated to the general government a power to take away such of our rights as we had not enumerated; but by delegating express powers, we certainly reserve to ourselves every power and right not mentioned in the constitution." (*Ibid.* p. 44.)—*Southern Review, on the Constitution of the United States, for May, 1828.*

Upon this precise point it was prophetically said by the able and eloquent Virginian, Patrick Henry, against granting powers by implication, "If they (the federal government) can use implication for us, they can also use implication against us. We are giving power, they are getting power; judge then on which side the implication will be used. When we once put it in their power to assume constructive power, danger will follow. Implication is dangerous, because it is unbounded; if it be admitted at all, and no limits be preserved, it admits of the utmost extension. They say that every thing not given is retained; the reverse of the proposition is true by implication."—*Ibid.* p. 315.

And it is well said by Mr. Webster, in justification of limiting the power of legislation, that "The people have most wisely chosen to take the risk of occasional inconveniences from the want of power, in order that there might be a settled limit to its exercise, and a permanent security against its abuse. They have imposed

states, prior to the establishment of the United States, continue unaltered, except so far as they are granted to the United States. The true construction of the particular declarations in the constitution, and the extent of the authority still remaining to the several states, are to be ascertained by the practice of the respective governments, where there is no collision. In all other cases, where the question is of a judicial nature, doubts are determined by the supreme court of the United States. The people, as we have seen, have declared the constitution to be the supreme law; and every act of congress, every act of the state legislatures, and every part of every state constitution, which is repugnant to the constitution of the United States, is void. The determination of the supreme court must be final, because the constitution gives to that tribunal the power to decide, and gives no appeal from its decisions. But it is the familiar practice of the people to discuss those decisions with the most unlimited freedom; and the judges who pronounce them are subject to impeachment at the bar of congress for malversation in their posts.

The date of the constitution, and of American law generally, as contradistinguished from the old colonial constitutions and laws, is perhaps subject to some doubts. It has been shewn how gradually the national independence grew out of resistance to particular measures in 1774, extending itself to the abrogation of British authority and British courts of justice in 1775, until, in 1776, regular war broke out; and independence was first resolved upon in April, and then declared on the celebrated 4th of July of the last mentioned year. These various circumstances seem to render the point difficult to be determined when British law ceased to operate in the States. For New York, the date is said to be the 19th of April, 1775; but, generally, the 4th of July, 1776, upon which day the declaration of independence was signed, may be termed the earliest legal origin of American law. There was then also adopted and continued much of the old colonial law, or that which had grown up from what had accompanied the first emigrants, or had afterwards been adopted from England, or enacted at home, and by the colonial legislatures. Many difficulties attended the framing of the constitution: and it was not until November, 1777, that the congress could so far reconcile the discordant interests and prejudices of thirteen distinct commu-

nities as to fix upon the articles of confederation; nor was it until March, 1781, that all the several states accepted those articles which had been successively submitted to them for approval.

The powers of the federal government thus created were found too dependent upon the acquiescence of the separate states; and, in 1786, the old congress yielded to a call from certain delegates of a large majority of the states, to recommend the people to form a general convention of delegates from all the states, to "revise, amend, and alter," the articles of confederation. This recommendation was made accordingly; and such general convention (excepting Rhode Island, which did not send delegates) was assembled at Philadelphia, in May, 1787. After several months' deliberation, the present constitution, except the last articles, was agreed to. It was directed to be submitted to delegates, to be chosen by the people at large in each state, for their assent; the grand question turning upon the extent of the powers with which the several governments should be invested. Nearly a year elapsed before nine states had adopted this constitution; it then received a political existence; but it did not obtain the unanimous ratification of all the members of the original confederacy until June, 1790. The intervening discussions were, however, unattended by the loss of a single life; nor were the doubts of the objecting parties of a nature to lead to any differences more serious than those of opinion, or than the somewhat bitter party feelings, now understood to be daily softening, or seeking scope in new channels. But if the particular parties into which political society was divided during the last forty years have lost much of their noxious character, to her difficulties respecting the constitution, not essentially different from the old ones, have occurred; and they are difficulties of a kind to require the exercise of all the wisdom of this people, in order that they may find a good issue. In the construction, too, of the constitution, great diversities of opinion have arisen, traceable, perhaps, to the same source of proper jealousy of the encroachments of the central government, as much as to the intrinsic difficulty of framing important documents clearly. Of these diversities of opinion, an able writer in the United States has lately said, that they "threaten to become intermingled with sectional feelings and sectional interests, and if not terminated by some new compromise in the spirit of our ancient friendship, they

prohibitions and restraints; and they have not rendered these altogether vain by conferring the power of dispensation. No legislature in this country is able, and may the time never come when it shall be able, to apply to itself the memorable expression of a

Roman pontiff: *Licet hoc, de jure non possumus, volumus tamen de plenitudine potestatis.*—*Speeches and Forensic Arguments, by Daniel Webster, Boston, 1830, p. 136.*

may endanger the peace and permanence of the union."* These questions will be noticed briefly as we proceed.

The legislative powers are vested in congress, and in the legislatures of the separate states, according to principles settled by the constitution. The limits of these authorities have given rise to various questions, the nature of which may be estimated by the points mentioned in the notes below.†

The question how far state governments have concurrent power, in the legislative or judicial, over cases within the jurisdiction of the government of the United States, has been much discussed. The correct principle is, that whenever the terms in which a particular power has been granted to congress; or the nature of that power, require it to be exercised exclusively by congress, the subject is as absolutely

* Southern Review, May, 1828, p. 274.

† The power to regulate commerce, Con. Act i., s. 8. chap. iii. is vested in congress, exclusively of each of the states.—Gibbons v. Ogden, 9 Wheaton, 186, &c. Under this power, congress may lay an embargo.—2 Hall's Law Journal, 255; Acts of Dec. 22, 1807.

Congress may provide for the punishment of foreign pirates.—3 Wheaton, 630.

Const. Art. I. s. 8. chap. 18.—"Necessary." The word "necessary" in this article means needful, requisite, essential, conducive to, and gives to congress the choice of the means best calculated to exercise the powers they possess. (4 Wheaton, 413; 2 Cranch, 358, 396; 3 Wheaton, 304.) Hence congress have power to inflict punishment in cases not specified by the constitution; such power being implied as necessary to the sanction of the laws and the exercise of the delegated powers. (4 Cranch, 146; 3 Wheaton, 336;) and to exact an oath of office, (4 Wheaton, 415;) and to punish larceny of letters from the post-office, or robbery of the mail, (*ibid.* 417;) and to create a corporate bank, if necessary, for carrying into effect the powers vested in the government of the United States, (*ibid.*; 9 Cranch, 374;) and to secure to the United States a priority of payment from the effects of an insolvent debtor. (2 Cranch, 159; 9 Cranch, 374.)

The prohibition to pass *ex post facto* laws applies exclusively to criminal or penal cases. 3 Dallas, 386; and see on this article, 1 Cranch, 109; 4 Dallas, 14.

The president's instructions are no justification to illegal acts.—Little v. Bareme, 2 Cranch, 170.

Public works. The exercise of authority by congress over great public works, commonly spoken of under the terms, "internal improvements," as roads and canals, and the like, is an occasion of much controversy in the United States, which seems to tend towards limiting the extent hitherto assumed by the federal government. See Webster's Speeches, pp. 393, 398; President Madison's Letter; and the Southern Review for May, 1828, pp. 286, 290.

The regulations of the houses of congress resemble, in many particulars, those of the houses of parliament; in other respects they have made original rules.

The house of representatives choose their own speaker, but the vice-president of the United States is *ex-officio* president of the senate, and gives the casting vote when they are equally divided.

The proceedings and discussions in the two houses are public; but less careful provisions seems to have been yet made for reporting the debates and proceedings than, as we shall hereafter find, have been made in regard to the courts of justice.

The constitution of the United States requires no evidence of property in the representative, nor any declaration of religious belief; but he must not hold any office under the United States.

A member of congress may be expelled for a high misdemeanor.—The cases of W. Blount, 1797; and J. Smith, 1807.

taken from the state legislature, as if they had been forbidden to act. When the laws of particular states and the laws of the union are in direct and manifest collision, those of the union being the supreme law of the land, are of paramount authority; and the state law, so far only as such incompatibility exists, must yield. If a particular state and the union impose taxes on the same article, it has been questioned whether the union would have the priority of payment. But the United States have declared by law that they are entitled to such priority in respect to debts. The concurrent power of legislature in the states seems, indeed, to be not an independent, but a subordinate power, liable, in many cases, to be extinguished, and in all cases to be postponed to the supreme law of the union, whenever the federal and the state regulations interfere with each other.‡

No member of congress shall hold any contract to be made in behalf of the United States.—Act, April 21, 1808.

By the act of 7th March, 1822, the representatives are apportioned according to a ratio of one for every forty thousand persons, making two hundred and thirteen members, the present number of the house; besides delegates from three of the territories belonging to the United States, who have a right to debate, but not to vote.

The elections are held at stated seasons established by law. The people vote by ballot, in small districts, and public officers preside over the elections, receive the votes, and maintain order and fairness. Though the competition between candidates is generally active, the elections are everywhere conducted with tranquillity. A very few exceptions occur to voting by ballot, as in Kentucky and Virginia; and in 1821, when the constitution of Massachusetts was amended, it became a question, whether the votes of the people upon the proposed clauses of amendment should be taken, in the towns of 4,000 inhabitants and under, by ballot or not. Upon a division in the convention, a majority of 185 to 69 was against the ballot being *necessarily* the way of taking the votes upon that occasion, which was left to the selectmen.—*Massachusetts Convention Debates*, p. 272.

The electors of president, or vice-president of the union, under section I. of the second article of the constitution, have been appointed hitherto, either upon the plan of balloting by what is termed "general tickets;" or upon the plan of balloting "by districts." On the former plan, each voter in the state puts into the balloting-box a list of all the individuals whom he chooses for the whole state. On the latter plan, the voters of separate districts in the state put into the box the name, or names, of the elector or electors for their districts; and separate majorities determine the choice of the individuals, who are afterwards united, in order to become the electors for that whole state.

Voters are, for the most part, all the resident *white* men of twenty-one years of age. The qualification of 200 dollars in property was abolished in Massachusetts in 1821; and that of being a freeholder was abolished in Virginia in 1830, and in other states in earlier years. Indians, if taxed, vote in Maine; and in New York a man of colour may vote, if possessed of a freehold worth 250 dollars; generally, men of colour are expressly excluded. In some cases, in Connecticut, "good moral character" is necessary to the voter. In Vermont, he must be "of quiet and peaceable behaviour." In almost all cases, residence of three, six, or twelve months, in their particular state, before voting, is required. Sometimes the qualification for voting for senators differs from that of voting for members of the house of representatives.

‡ For this doctrine, and indeed for a large portion of this chapter, we are indebted to Chancellor Kent's Commentaries on American Law, a work that does not require the humble tribute of our praise.

It is an illustration of the success which has attended the efforts of the Americans to strengthen the guarantees of good government, and make "the fiend, Discretion," with all its vices, give place to the many virtues of "sovereign law," that the statutes of the country mark out their duties even to the great officers of government.* To listen to the advocates of despotic authority in Europe, and even to those who are guided only by the English public service of the last half century, it would be supposed that abject submission to a superior's command is an inevitable adjunct to vigorous official service; and that to pause till convinced of the legality of an order, would be incurring the great evil of a feeble administration of affairs. The modern Americans wisely think otherwise; and are, therefore, realizing the excellent system of official responsibility, combined with sufficient and safe despatch, which the old English constitution, with its forgotten oaths of office, and neglected statutes, equally aimed at, and which modern English reformers must revise and improve.

A grave exception to the rule, that law governs every thing in the United States, is to be found in the want of legal redress for claimants upon the funds or justice of the government. The United States cannot be sued; and no other remedy exists for a creditor who is refused payment at the treasury, or elsewhere, than an application to congress. There is even no lien against the government for advances made to its use. This is one of the principles imported from the old governments of Europe, which arm the strong against the weak, and, like the priority given to the United States as creditors, ought to be removed from an enlightened system of legislation.

The theory of even the parent English constitution is adverse to this rule. There, as well as in the United States, every wrong is presumed to have its remedy, and every claim its redress; but it is abundantly clear that, without peremptory access to a fixed judicial tribunal, invested with the ordinary duty to dispense right to every complainant, redress

will often be sought in vain. Legislative justice, or justice to be granted only on the grace of a sovereign to a petition, implies the exercise of a discretion which is but too apt to be swayed by personal considerations, or by the feelings of the times. Long experience in England has proved how great is the evil of this principle there; and already have some very serious inconveniences to individuals arisen from it in America, where it is peculiarly discordant with the almost universally good guarantees established by the republic in defence of rational freedom. There are many cases requiring redress, which the ordinary courts do not receive, the parties being left to the eleemosynary remedy of petitions to congress. The dependence of congress upon popular elections checks the evil prevalent in other countries on the point; but the complaining party finds *interest* needful, a thing always fatal to peace, and often to justice. How precarious a petitioner may find his situation in such a state of things, is pleasantly to be learned from the passage in the note below.†

The executive power vested in the president by the foregoing written constitution, and the influence to be obtained from the nomination to public offices, have often been commented upon severely as great defects; and the proposed remedy to be found in disqualifying the president from a second election has recently been urged upon congress and the people with renewed earnestness. In some of the states, as in Louisiana, checks have been devised against the appointment of unfit persons to public posts; and throughout the Union, unquestionably, the president, or any governor who should make such unfit appointments, as in England any minister who should advise them, would be punishable;—the English minister under the old common law, which prescribes, that the best men shall be placed in offices of trust; and the American president, or governor, under the portion of the common law originally carried from home upon this important subject. The power of the president, however, to remove all executive officers at his will or pleasure has been settled, not in-

* 6 Wheaton, 411; 3 Hall's Law Journal, 130.

† "Mr. Gallatin came to Virginia when a very young man; he was obscure and unknown, and being engaged in some agency which made it necessary to present a petition to the assembly, he endeavoured to interest the leading members in its fate, by attempting to explain, out of doors, its merits and justice. He spoke English so badly, that they could not understand him well enough to feel any interest either for him or his petition. In this hopeless condition, he waited on Mr. Henry, and soon felt that he was in different hands. Mr. Henry, on his part, was so delighted with the interview, that he spoke of Mr. Gallatin every where in raptures; he declared him, without hesitation or doubt, to be the most sensible and best informed man he had ever conversed with; 'he is to be sure,' said he, 'a most astonishing man.' The reader

well knows how eminently Mr. Gallatin has justified Mr. Henry's sagacity."—*Wirt's Life of Patrick Henry*, p. 410.

This case was one of harmless exertion of interest; but it suggests the importance of a rule, that all who have claims to prefer to the consideration of public assemblies, or to sovereigns, should be entitled to be heard as of course, and with attention, upon a *statement of their claims*. *Petitions* are forms only fit to be addressed to the Deity.

The foregoing defect in the American constitution has long been regretted; (St. George Tucker's *Blackstone*, vol. i. part i. Appendix, p. 117. 1803;) and in the speech of the president to congress, in 1831, it is intimated that an amendment of the law is strongly desired.

deed judicially, but by the declared sense of the legislature, and the uniform acquiescence and practice of the government.

The appointment and the removal of public functionaries, however, have not failed to attract much consideration in the United States. If any doubt exists, whether the ancient statute of Richard the Second, that public offices shall be given only to the "best" men, applied to the old colonies, unquestionably the still more ancient common law of the like tenour, on which that statute was founded, was carried by the first settlers to America, and was retained at the revolution. Popular election is the grand check on favouritism and on the mischievous principle of patronage; but attempts, as above stated, have been made in this matter, to impose rules upon the exercise of irregular discretion; and traces may be found, even in periods of strong popular excitement, of just preferences prevailing in favour of fit public officers, whose fair claims were endangered by the violence of party spirit. Occasions sometimes occur when sound views upon this subject are of great importance. Changes take place among leaders; and their power is often sought to be strengthened by a change of the subordinate functionaries. In 1801, circumstances of this kind happened; and the correspondence of President Jefferson for that year furnishes admirable comments upon the duty of government in such conjunctures. Certain merchants of New England had remonstrated with the president for appointing a particular individual to one post, and for removing another individual from another post. In reply, Mr. Jefferson admits fully the right and the usefulness of such remonstrances; and adds,—“Of the various executive duties, no one excites more anxious concern than that of placing the interests of our fellow-citizens in the hands of honest men, with understandings sufficient for their stations. No duty, at the same time, is more difficult to fulfil. The knowledge of character possessed by a single individual is, of necessity, limited. To seek out the best through the whole union, we must resort to other information, which, from the best of men, acting disinterestedly and with the purest motives, is sometimes incorrect.” The grounds of the appointment are then stated, concluding with these words:—“The remonstrance, indeed, does not allege that the office has been ill conducted; but only apprehended that it will be so. Should this happen in event, be assured I will do in it what shall be just and necessary for the public service. In the mean time, the person

appointed should be tried without being prejudged. In reply to a case of removal complained of, the president says, “When it is considered that, during the late administration, those who were not of a particular party in politics were excluded from all office; when, by a steady pursuit of this measure, nearly the whole offices of the United States were monopolized by that party; when the public sentiment at length declared itself, and burst open the doors of honour and confidence to those whose opinions they more approved, was it to be imagined that this monopoly of office was still to be continued in the hands of the minority? Does it violate their equal rights to assert some rights in the majority also? Is it political intolerance to claim a proportionate share in the direction of public affairs? If the will of the nation, manifested by their various elections, calls for an administration of the government according with the opinions of those elected; if a due participation of office is matter of right, how are vacancies to be obtained? Those by death are few; by resignation none. Can any other mode than that of removal be proposed? This is a painful office; but it is made my duty, and I meet it as such; I proceed in the operation with inquiry and deliberation, that it may injure the best men least, and effect the purposes of justice and public utility with the least private distress; that it may be thrown, as much as possible, on delinquency, on oppression, on intolerance, on anti-revolutionary adherence to our enemies. The remonstrance laments that a change in the administration must produce a change in the subordinate officers; in other words, that it should be deemed necessary for all officers to think with their principal; but on whom does this imputation bear? On those who have excluded from office every shade of opinion which was not theirs; or on those who have been so excluded? I lament sincerely that unessential differences of opinion should ever have been deemed sufficient to interdict half the society from the rights and the blessings of self-government—to proscribe them as unworthy of every trust. It would have been to me a circumstance of great relief, had I found a moderate participation of office in the hands of the majority. I would gladly have left it to time and accident to raise them to their just share; but their total exclusion calls for prompter correction. I shall correct the procedure; but, that done, return with joy to that state of things, when the only questions concerning a candidate shall be—Is he honest? is he capable? is he faithful to the constitution?”*

* The course actually taken was somewhat opposed to the eagerness of the majority; but the republican administration of Mr. Jefferson persevered in it, and, in 1802, he again describes it in the following terms: “I still think our original idea as to office is the

Vol. II.—Nos. 27 & 28. 2 G

What has already been said of executive government relates, in a great measure, to the union. That of the separate states is not less important. Its character may be collected from the constitution of the two states, and from various details already presented to the reader. In those states, the governors and other functionaries derive their powers from the constitution and statutes of the states respectively. But in the territories not yet admitted as states into the union, special acts of congress determine these points independently of the inhabitants of these territories. The appointment, succession, correction, and removal of such governors and functionaries, are determined often directly, and in all other cases indirectly, by the votes of the people. The people, too, transact many public affairs in their own persons in townships, of which Massachusetts has for nearly two centuries exhibited examples not be surpassed in excellence in any nation in the world. The constitution of 1780, for example, declares, as the old laws directed, that education shall be duly provided for by public schools and grammar schools in the towns; and the duty of making this provision in imperative on the township corporations elected by the people; the breach of which duty may be punished by indictment, preferred by any inhabitant. Again, the same constitution declares, as the ancient law sanctioned, that the people have a right, in an orderly and peaceable manner, to assemble to consult upon the common good, and, by way of addresses, petitions, or remonstrances, to seek redress

best; that is, to depend for obtaining a just participation on deaths, resignations, and delinquencies. This will least affect the tranquillity of the people, and prevent their giving in to the suggestion of our enemies, that ours has been a contest for office, not for principle. To these means of obtaining a just share in the transaction of public business, shall be added one other; to wit, removal for electioneering activity, or open and industrious opposition to the principles of the present government, legislative and executive. Every officer may vote at elections according to his conscience; but we should betray the cause committed to our care were we to permit the influence of official patronage to be used to overthrow that cause."

In the spirit of these principles, Mr. Jefferson, in old age, expressed strong satisfaction at his own course on this head—a course which affords a noble contrast to the wretched nepotism practised in other countries:—"In the trusts I have exercised through life, with powers of appointment," says he, "I can say, with truth, and with unspeakable comfort, that I never did appoint a relation to office; and that merely because I never saw the case in which some one did not offer or occur better qualified." And in a still more important passage on this subject, he also said, "I have never removed a man merely because he was a federalist; I have never wished them to give a vote at an election but according to their own wishes: but as no government could discharge its duties to the best advantage of its citizens, if its agents were in a regular course of thwarting, instead of executing, all its measures, and were employing the patronage and influence of their offices against the government and its measures, I have only requested they would be quiet, and they should be safe; that if their conscience urges them to take an active and zealous part in opposition, it ought also to urge them to retire from posts which they

of grievances of the legislative body. Such rights as these are for the most part exercised through the townships, where the selectmen would be subject to punishment in the courts of law, if they obstructed the holding of public meetings on such subjects.

The expenditure of money for local purposes, as the building of court-houses and the like—the assembling of militia—election of officers—and the appointment of constables for the preservation of the peace, are vested in the same local divisions, whose disinterested, wise, and vigorous exertions in the great contest for independence, have been justly eulogized by one of the most eminent American statesmen of the present day,* and which were thought models for good internal government by the ablest of his predecessors.†

The judicial establishments of the United States are the supreme court, the circuit courts, and the district courts; besides which, each state has its own judiciary, connected, by appeals and otherwise, with that of the union.

The supreme court consists of a chief justice and six associate justices, any four of whom are a full court; and any one can make orders in suits preparatory to the hearing or trial. It holds one term annually, which begins in January; it has exclusive jurisdiction in all causes of ambassadors and the like, and also in all civil causes in which a state is a party, except in suits by a state against one or

could not conscientiously conduct with fidelity to their trusts; and, on failure to retire, I have removed those who maintained an active and zealous opposition to the government."—*Jefferson's Correspondence*, vol. iii. pp. 474—508; vol. iv. pp. 397, and 101. (A. D. 1824.)

* "We have not always," says Mr. Webster, "done justice to the merits and to the sufferings of those who sustained, on their property, and on their means of subsistence, the great burden of the revolutionary war. Any one who has had occasion to be acquainted with the records of the New England towns, knows well how to estimate these merits and these sufferings. Nobler records of patriotism exist nowhere; nowhere can there be found higher proofs of a spirit that was ready to hazard all, to pledge all, to sacrifice all, in the cause of the country. The voice of Otis and of Adams, in Faneuil Hall, found its full and true echo in the little councils of the interior towns; and if, within the continental congress, patriotism shone more conspicuously, it did not there exist more truly, nor burn more fervently; it nowhere made the day more anxious, nor the night more sleepless; it sent up no more ardent prayer to God for succour; and it put forth, in no greater degree, the fulness of its effort, and the energy of the whole soul and spirit in the common cause, than it did in the small assemblies of the towns."—*Mr. Webster's Speech in the Convention of Massachusetts, in 1820, on the Apportionment of the Senate*, p. 245. *White's Digest of the Laws of Massachusetts*, 1809.

† In describing what he thought the best organization of government, Mr. Jefferson says,—"The townships of New England are the vital principles of their governments, and have proved themselves the wisest invention ever devised by the wit of man for the perfect exercise of self-government, and for its preservation."—*Correspondence*, vol. iv. p. 297.

more of its citizens, or against citizens of other states, or aliens. In these excepted causes it has original, but not exclusive jurisdiction. It also receives appeals from the circuit courts, and in admiralty cases, where the matter in dispute exceeds 2,000 dollars; and a judgment or decree in the highest state court may be brought up, on error in point of law, to the supreme court of the United States, provided the validity of a treaty, or statute of, or authority exercised under, the United States, was questioned in the state court, and the decision was against that validity; or provided the validity of any state authority was questioned as repugnant to the constitution, the treaties, or laws of the United States, and the decision was in favour of that validity; or provided the construction of any clause of the constitution, or of a treaty, or statute of a commission, held under the United States, was questioned, and the decision was against the title, right, privilege, or exemption, claimed under the authority of the union. By a rule worthy of adoption in the superior courts of all countries, the supreme court of the United States may receive and determine a single point of law upon which the judges in the inferior court are opposed in opinion.* The principle of stating specific cases for the decision of the upper courts is not altogether new, and it obviously admits of very advantageous application to all jurisdictions, but especially to every country, where, as in English colonies, distant dependencies have to seek the correction of errors, or the check of abuses, almost invited by the remoteness of place, and the inferiority of the primary tribunals. The supreme court can issue prohibitions to the district courts when proceeding as courts of admiralty;—writs of mandamus to any courts appointed by officers of the United States;—writs of *ne exeat* on a suit commenced;—and injunctions, on reasonable notice to the adverse party, but not to stay proceedings in any state court;—and also writs of habeas corpus.

The circuit courts are seven in number, and held in separate districts, extending over eighteen out of the twenty-four states, by one judge of the supreme court of the United States, and the local judge of the district. In special cases, two of the supreme court judges attend; and where the district judge

shall be absent, or is interested, one may sit alone. The circuit courts have original cognizance, concurrent with the courts of the several states, of all suits where the matter of dispute exceeds 500 dollars, and the United States are plaintiffs, or an alien is a party, or the suit is between a citizen of the state where the suit is brought and a citizen of another state, and in all suits under any law of the United States on copyright and patent rights. They receive also appeals from all decrees and judgments in the district courts, where the matter in dispute exceeds fifty dollars; and certain cases of the value of 500 dollars may be removed by the defendant from a state court to the next circuit court. In criminal trials they have, with a few exceptions, exclusive jurisdiction of all offences cognizable under the authority of the United States, exceeding misdemeanours; and in misdemeanours they have concurrent jurisdiction with the district courts. After much discussion, it seems† to be now settled, that one of the judges at the circuit courts shall be taken from the sitting members of the supreme court at Washington, who thus carries periodically into distant states the uniformity and learning of the capital, and at the same time acquires much knowledge whilst actually engaged in local affairs.

The districts generally extend over an entire state; but in six states there are more districts than one. A court is established in each district, consisting of one judge, who holds annually four stated terms, and also special courts in his discretion. They have exclusive original cognizance of all civil admiralty causes; of seizures under impost, navigation, or trade laws of the United States, when the seizures are made on the high sea, or on waters navigable from the sea by vessels of ten or more tons' burthen; and of all other seizures made, and suits for penalties, under the laws of the United States. They have also concurrent jurisdiction with the circuit and state courts in certain suits by aliens; and of all suits at common law, of 100 dollars' value and upwards, in which the United States are plaintiffs; and over all captures made within the waters of the United States, or within a marine league of its coasts; and they have jurisdiction of proceedings to repeal patents obtained surreptitiously, or on false suggestions. In

* Act of congress, April 29, 1802.

† It is, however, even now considered by many persons a great question, whether, by the terms of the constitution, and in accordance with sound policy, the supreme court ought not to be confined, with all its members, to the session at Washington, solely as a court of appeal, except in a few cases of original jurisdiction. From 1789 the judges have made circuits over part of the states, the more remote parts of the union being too distant for their visitation. If a sufficient number be added for new states of the

union, not now visited by any circuit, the collected members at Washington will, it is thought, partake too much of the character of a popular assembly; and the objection is alleged to be still stronger, if the great duty of the court in appeals is to be impeded by some of its members being the parties appealed from. Upon these grounds it is urged that the circuits from the supreme courts should be abolished. The president's speech to congress, in December, 1831, brought the question under notice.

bankruptcy, a summary jurisdiction, without appeal, has been claimed for the district judges: but the opinions of able lawyers are adverse to the claim; and in the new bankrupt system expected to be established in the United States, no such objectionable authority is likely to be vested in these courts. In criminal trials they have exclusive jurisdiction over offences cognizable under the authority of the United States, committed within their respective districts, or upon the high seas, and punishable by a fine of 100 six months, or by corporal punishment, not exceeding dollars at the utmost, by imprisonment, not exceeding thirty stripes. When the parties have not reasonable time to apply to the circuit court, the judges of the district courts may issue injunctions to continue until the next circuit court; and when the judge of the supreme court cannot conveniently come, the powers of a circuit court are superadded to the ordinary powers of the district court. The district judges of the United States are required to reside within their respective jurisdictions.

In appeals to the circuit court, if the circuit judge and district judge associated with him differ, the judgment is according to the opinion of the circuit judge. In original causes, points in difference may be certified to the supreme court for its decision; but in no case shall imprisonment be allowed, or punishment inflicted, where the judges of the circuit court are divided in opinion.

The judicial power of the general government in the supreme court, in the circuit and district courts, is limited to objects more expressly defined by written law than the judicial powers of the state courts; and between the two classes of courts, distinctions deserving of careful notice by the student of the American institutions, have been made by good authority:—1. The cognizance of every crime and misdemeanour whatsoever, committed within the body of any state, belongs to the courts of that state in which the offence is committed, exclusively, unless it can be shown that power over the subject has been expressly granted to the United States by the federal constitution. 2. The federal courts possess no jurisdiction over any crime or misdemeanour which is an offence by the common law, and not declared to be such by the constitution, or some statute of the United States. 3. Although a certain class of offences may, by the constitution of the United States, be declared to be within the jurisdiction of the federal courts, yet these courts cannot proceed to take cognizance thereof, unless they be first defined

by the constitution, or by statute, nor to punish them, unless the punishment be likewise prescribed by a statute of the United States.*

The vast field of the law of property, the very extensive head of equity jurisdiction, and the principal rights and duties which flow from civil and domestic relations, fall within the control, and we might also say the exclusive cognizance, of the state governments. The elementary principles of the common law are the same in every state, except Louisiana and Florida, where French and Spanish laws have prevailed.†

The state courts are invested with the cognizance of cases arising under the laws of the United States, in certain suits for taxes, and in certain prosecutions for fines and forfeitures under the revenue laws.

In judicial matters, the concurrent jurisdiction of the state tribunals with the tribunals of the union depends upon the judgment of congress, and may be revoked and extinguished whenever it thinks fit, in every case in which the subject matter can constitutionally be made cognizable in tribunals of the union; and, without any express provision to the contrary, the state courts will retain a concurrent jurisdiction in all cases where they had jurisdiction originally over the subject matter.

Both in the courts of the federal government, and in those of the particular states, the important advantage is enjoyed of a very considerable separation of the judicial from the executive and legislative authorities. It is, however, a curious fact, that so late as the year 1820, it was a subject of debate in Massachusetts, whether the judges of that state should continue to be advisers of the executive government, upon questions propounded to them by the governor. During about a century, the old practice in England, that the judges of Westminster Hall should give opinion upon cases from the crown, has fallen into disuse; but its offspring very long survived it in America.‡ The independence of judges is variously secured: those of the United States can only be removed by impeachment, and not by address of the house of representatives; they must consequently be accused of specific offences, and be heard before condemnation.‡ This is the general rule of the separate states; but in Virginia they are liable to removal upon the address of the legislature. In Vermont and Rhode Island they are reappointed every year. Other states appoint them for seven, five, three, two, and six years; and able men still differ on what is

* St. George Tucker's Blackstone, vol. iv. Appendix, p. 110.

† Chancellor Kent's Commentaries, p. 418.

‡ Journal of the Debates of the Massachusetts Convention, of 1820, p. 213.

the right basis, in this respect, of a true judicial independence.*

In some of the states, the ages of sixty, sixty-five, and seventy, are limited for the holding of the judicial office. No judge of the United States can practice as a counsellor; nor in the supreme court can any counsellor practise as an attorney, nor an attorney as a counsellor. In all the other courts the rule is otherwise; and in this counsellors may be admitted as attorneys. The salary of the chief justice of the United States is 5,000 dollars; each of the associate justices receives 4,500 dollars; and the attorney-general 3,500. The salaries of the judges of the district courts vary from 1,000 to 3,500 dollars; each of the attorneys-general, and the marshals, or sheriffs of the district courts, receives 200 dollars, with fees; nor does any considerable attention appear to have been yet directed to the very important subject of administering justice without allowing fees to the subordinate officers.

The courts of the several states have long been held by judges bred to the law as a profession; and many of them are eminently learned men. Their yearly salaries vary from 550 to 3,500 dollars. They are appointed by the legislature in fourteen states; by the governor and senate in seven states; by the governors alone in two states; and in the state of Indiana, those of the supreme court are appointed by the governor and senate; the presidents of the circuit courts by the legislature; and the associate judges by the people.

Justices of the peace have to decide many civil causes, to a limited amount in value, besides the criminal and police business within their cognizance; and they are severally liable to removal upon the address of the legislature, and upon condemnation of certain offences, and upon impeachment. In some of the states they are appointed justices by other authorities, and sometimes they are elected by the people; but they are not restrained from seats in the legislature, a circumstance which has been the occasion of much regret to Americans of the highest authority.†

It belongs to the judicial power chiefly to declare every act of the legislature made in violation of the constitution, or of any provision of it, null and void. Accordingly, in 1791, the judges of a circuit court in New York declared an act of congress, assigning ministerial duties to them, to be unconstitutional, and not obligatory; and in two other states the circuit judges declined to act under the law in any capacity.‡ In 1792, the supreme court of South

Carolina set aside an act of the state legislature as being against common right and the principles of magna charta. In 1795, a judge at Philadelphia declared an act of Pennsylvania to be unconstitutional, and not binding. The same doctrine was maintained afterwards in South Carolina, where the judges claimed to be only the administrators of the public will, and declared the law void, not because they had any control over the legislature, but because the will of the people expressed in the constitution was paramount to that of their representatives expressed in the law. Much later the subject was brought before the supreme court of the United States, when the power and duty of the judiciary to disregard an unconstitutional act of congress, or of any state legislature, was declared as an argument approaching, says Chancellor Kent, "to the precision and certainty of a mathematical demonstration." Until 1823, the judges in the state of New York constituted what was called the council of revision, by which every law was examined before it became a valid statute. The absolute separation of the judicial from the other powers of state is too important to justify a regret that the judges should be withdrawn from this duty; but the testimony of the learned chancellor, to whom we have been so much indebted in compiling this summary upon the constitution of the United States, in favour of the labours of the New York council, suggests the importance of attaching to all legislatures a ministerial body of constitutional lawyers, whose reports might merit Mr. Kent's eulogium, "that they would show that many a bill heedlessly passed the legislature was objected to and defeated on constitutional grounds—reports replete with salutary and sound principles of public law and policy, and monuments of the wisdom, firmness, and integrity of the council." The power of the judges to check the legislative and the executive government, is a power obviously liable to abuse by the courts themselves, and to undue jealousy on the part of those upon whom they are checks. Accordingly, the exercise of this power will be found one of the most interesting subjects to the inquirer into the constitution of the United States. The principal checks upon the judges in their turn are, first, public opinion;—secondly, the indirect elective control of the people over the president and others who appoint the superior judges, and the direct popular control over those inferior judges who are elected by the people;—and thirdly, the liability of the judges to impeachment before the elective senate.

* St. George Tucker's Blackstone, vol. i. b. 1. Appendix, p. 116.
† Jefferson's Correspondence, vol. iv. p. 296, &c.

‡ St. George Tucker's Blackstone, vol. i. Appendix.

The laws administered in the courts is, with a just pride, termed by the writers of the United States, "American law." Its sources are, 1st, the law of England, wide as that title is, and modified by the great English principle, that colonists take abroad with them only so much of the law of the mother-country as is suitable to their new circumstances; 2dly, in particular states, as Louisiana and the Floridas, so much of other foreign law as affects those places; 3dly, the law of nations and nature; and lastly, but principally, the constitutions and statutes of the United States, and the several domestic legislatures, and the treaties with foreign powers, with the rules and decisions of the court of law.

It has been a subject of much discussion, whether the courts of the United States have a common law jurisdiction, and if any, to what extent. It seems to be settled, that although the federal government has not adopted the common law as a source of jurisdiction, nevertheless that the courts of justice must resort to it largely as the instrument for exercising the jurisdiction conferred by the constitution, and the means of interpreting constitutional language.* Therefore the study of common law is recommended by Chancellor Kent as part of the jurisprudence of the United States. "In its improved condition in England," says this eminent judge, "and especially in its improved and varied condition in America, under the benign influence of an expanded commerce, of enlightened justice, of republican principles, and of sound philosophy, the common law has become a code of matured ethics and enlarged civil wisdom, admirably adapted to promote and secure the freedom and happiness of social life. It has proved to be a system replete with vigorous and healthy principles, eminently conducive to the growth of civil liberty; and it is in no instance disgraced by such a slavish political maxim as that with which the Institutes of Justinian are introduced. It is the common juris-

* Mr. Justice Story, who has occupied an eminent rank amongst the judges of the United States these twenty years, places the true doctrine in a very clear light. "I admit," says he, "that the courts of the United States are courts of limited jurisdiction, and can not exercise any authorities not confided to them by the constitution and the laws made in pursuance thereof. But I do contend, that when once an authority is lawfully given, the nature and extent of that authority, and the mode in which it shall be exercised, must be regulated by the rules of the common law. Whether the common law of England, in its broadest sense, including equity and admiralty, as well as legal doctrines, be the common law of the United States or not, it can hardly be doubted that the constitution and laws of the United States are predicated upon the existence of the common law. The constitution, for instance, provides that 'the trial of all crimes, except in cases of impeachment, shall be by jury.' I suppose that no person can doubt that, for the explanation of these terms, and for the mode of conducting trials by jury, recourse must be had to the common law. So the clause, that 'the judicial power shall extend to all cases in law

prudence of the people of the United States, and was brought with them as colonists from England, and established in America, so far as it was adapted to our institutions and circumstances. It was claimed by the congress of the united colonies, in 1774, as a branch of those 'indubitable rights and liberties to which the respective colonies are entitled.' It fills up every interstice, and occupies every wide space, which the statute law cannot occupy."† The learned Du Ponceau correctly observes,‡ "We live in the midst of the common law: we inhale it at every breath, imbibe it at every pore; we meet with it when we walk, and when we lie down to sleep; when we travel abroad, and when we stay at home; it is interwoven with every idiom of our tongue; and we cannot learn another system of laws without learning at the same time another language." Upon this somewhat rhetorical claim of a participation of the old common law, as carried from England, the Americans have also erected the further very important doctrine, that usages peculiar to the United States have been ingrafted upon it, so as that there is now produced an American common-law jurisprudence, different in many respects from that of their forefathers, and in harmony with their own more republican institutions.

Equity has been less universally introduced than the other branches of the common law. In Massachusetts, Pennsylvania, and some other states, there are no courts of equity; but equity processes are given to the courts on some points; and public opinion seems to be favourable to the extension thither of that system of chancery law, which, through the eminent judicial labours of Chancellor Kent, has been brought to a very improved condition in New York. The topic, however, is open to interesting questions, and is much discussed. In Virginia, and perhaps in other states, a principle of equity has been transferred to the common-law courts, where the

and in equity arising under the constitution,' &c. is inexplicable, without reference to the common law; and the extent of this power must be measured by the powers of courts of law and equity, as exercised and established by that system. Innumerable instances of a like nature may be adduced. I will mention but one more, which is in the clause providing that the privilege of the writ of habeas corpus shall not be suspended, unless when, in cases of rebellion or invasion, the public safety may require it. What is the writ of habeas corpus? What is the privilege which it grants? The common law alone furnishes the true answer. The existence, therefore, of the common law, is not only supposed by the constitution, but is appealed to for the construction and interpretation of its powers." *The United States v. Coolidge.*—1 *Gallison's Reports*, p. 488. 1813.

† Chancellor Kent's *Commentaries*, vol. i. p. 322.

‡ Du Ponceau on *Jurisdiction*, p. 91. On this subject, however, other adverse authorities should be consulted by the student, as St. George Tucker's *Blackstone*, vol. iv. p. 9.

parties, in civil actions, may examine their adversaries upon interrogatories, and without prejudice to a bill of discovery in chancery.*

The laws regulating property, and intercourse between man and man, are, in many respects, similar to the laws of England on the same subject matter. In numerous points, however, great changes have been made;† but the difficult and subtle questions arising out of the contingencies created by the free disposal of property, by conflicting claims, and by doubtful construction, are necessarily numerous in all the courts of the union. The forms of proceeding and practice in the courts have been extensively simplified, although on this head much remains to be improved.‡ The reduction of the court officers to a clerk and the common crier, indicates how large a portion of the old and useless machinery has been dispensed with. The writ of habeas corpus has not only been secured, as in England, but its remedy has been extended, by the power given to the judges of investigating the real merits of each case without

* Laws of Virginia for 1830, sect. 68.

† "The nature and extent of the improvement will be placed in a strong light by the following enumeration of the changes made in one or more of the states:—1. Abolition of feudal tenures, including copyholds. 2. Abolition of tithes. 3. Making both the real and personal property of intestates descend to the same person. 4. Enabling parents to become heirs to their children. 5. Abolition of primogeniture and of preference of males in descents. 6. Making all estates descend in the same course, whether acquired by purchase, or by descent from paternal or maternal relations. 7. Abolishing the preference of male stocks in descents. 8. Enabling half-blood relations to inherit. 9. Making husband and wife heir to each other in case of failure of blood relations. 10. Making seisin of land pass by the mere delivery of the deed. 11. The general registration of deeds. 12. Making a fee-simple pass without the word 'heirs,' or any equivalent, when a less estate is not expressed. 13. Enabling tenants in tail to convey estates in fee simple, without a fine or recovery. 14. Enabling married women to convey their estates and bar their dower without a fine. 15. Change of joint tenancies into tenancies in common. 16. Removing the disabilities of alienage with regard to real property. 17. Abolition of the doctrine of tacking in mortgages. 18. Placing lands mortgaged, as well as the debt, at the disposal of the mortgagee's executor. 19. Making real estates liable to execution and sale for debt. 20. Rendering real estate assets to pay debts without any preference. 21. Shortening the time of limitation."—*The American Jurist*, No. 1, p. 99.

‡ Upon the subject of pleading, Mr. Dane, the author of the Digest, says, "In modern, and especially in American practice, a great degree of liberality has been admitted, in giving matters formerly pleaded in evidence under the general issue. It is a very general practice in the United States to agree to cases, signed by the parties, for the opinions and decisions of the courts. Pleas in abatement are almost disused. Broad and very liberal statutes of amendments in the pleadings have been enacted in the United States, in addition to the statutes of this sort adopted from England; still the art of pleading is one which the Americans are seeking to simplify."—*Digest of American Law*, vol. v.—Title, "Pleading."

In Louisiana, the forms of pleading by the civil law prevail, of which an able judge says, "I can not help paying my humble homage to the excellence of this code, which, adapting its remedies to the exigency of the case, gives complete relief without trammelling itself with prescribed forms, which often perplex, and

confining themselves to the face of the return. Imprisonment for debt has been abolished in some of the states; and in almost all, females are exempt; and there is an increasing disposition to abolish it throughout the union, both under mesne process and in execution.§

In the study and practice of mercantile law,|| the American lawyers have made very great advances; and in these branches they have perhaps as far surpassed the English lawyers as they are excelled by the latter upon questions respecting titles to lands and real property, which are discussed much more frequently in England than the simplicity of that branch of the law requires in America. The deep learning and subtle argument displayed upon other legal topics, which might be thought peculiar to our own country, evince the great legal powers of the advocates of the American Bar.

In admiralty causes, there is understood to be the greatest similarity between the systems of America and Great Britain. The reputation of Lord Stowell

sometimes defeat, the ends of justice."—*American Jurist*, No. i. p. 17. This testimony is given to the civil law forms, compared with those derived from English pleadings.

"In England," says a learned writer in the *Southern Review*, for August, 1831, "the mere subtleties of pleading, such as go not to the merits, but to immaterial allegations, are too much encouraged. The record being paid for, and most extravagantly paid for, according to its extent, is the excuse for this, (*Burton v. Wright*; *Douglas and Cowper*;) but it were better that no necessity for such an excuse existed, as now exists here, where (to borrow a phrase of our own courts) 'the law mechanic' is paid a lumping price for the job. It would be well for England if she would copy after most of our judicial reforms, so far as they may not be inconsistent with the frame and policy of her constitution; and it is, no doubt, a very great compliment to the wisdom of our predecessors, that there is a marvellous coincidence between the reforms projected in that country, by her ablest men, and those which have been so generally adopted among us."—P. 393.

§ In Kentucky and Ohio imprisonment for debt is abolished; and the managers of the Boston Prison Discipline Society add, in their Report for 1830, "A similar law in the northern and middle states would have saved from imprisonment during the last year, as nearly as we can ascertain, about fifty thousand persons. The number of persons discharged by the creditor or his attorney is more than three times as large as the number of those who pay the debt."—Pp. 369, 370. Imprisonment for debt was also abolished in New York, in 1832.

By the constitution of Pennsylvania it is provided, that "the person of a debtor, where there is not a strong presumption of fraud, shall not be continued in prison after delivering up his estate for the benefit of his creditors." By the laws of the same state, however, and by those of most parts of the union, all personal estate, whether in funds or otherwise, and all real estate, whether legal or equitable, are liable to execution. Great facilities are afforded to creditors to obtain payment of debts from any property belonging to the debtor, but personal liberty is exposed to few restraints, even in the case of insolvency; and no inconveniences are believed to arise from this state of the law.—*House of Commons' Papers for 1831*, No. 92, p. 214:—"Evidence of Richard Biddle, Esq. before the common-law commissioners."

|| See particularly the arguments of Mr. Webster, on collegiate endowments, and on the impeachment of a judge of probate.—*Webster's Speeches*, pp. 110 and 138.

is very high in the former country, and, with some exceptions, attributed to particular circumstances, the differences between his decisions upon prize* law, and those promulgated by the supreme court of the United States, are so few, it is said, as to be almost evanescent. After the most powerful arguments, and under the highest political excitements, there has been but a single principle adopted by him which has been deliberately overruled by the supreme court; and on that occasion there was a serious difference of opinion among the judges.† It deserves, however, to be remarked, that the judge who is the most eminent for his early and continued success in the study of the mercantile and shipping-laws, Judge Story, is also earnest in his expressions of respect towards Lord Mansfield and other English judges who have improved these branches of jurisprudence.‡

The criminal laws are remarkable for their mildness; although, in other respects, as in their distinction between felonies and misdemeanours, and in some of the consequences of that distinction, they resemble the English criminal law. Although trial by jury is perfectly understood in the United States, and generally used, yet justices of the peace decide upon some felonies, as petty thefts, without a jury, unless the accused claims a jury trial; and in slaves' cases juries are very far indeed from being universal. Treason is confined, by the express terms of the constitution, to narrow limits. The only capital offences in any of the states are treason, murder, burglary, robbery from the person, and rape; and all these offences, except murder in the first degree of atrocity, are, in most of the states, usually followed by secondary punishment; and in some of the states they are liable to secondary punishment only. In Pennsylvania, no crime is punishable with death, but

murder perpetrated by means of poison, or by lying in wait, or by some other kind of wilful, deliberative, and premeditated killing, or perpetrated in the commission of certain crimes which were formerly capital;§ and great exertions are making in that state, and elsewhere in North America, not only to mitigate all severity in the criminal law, but especially to abolish all capital punishment.¶ It is said,¶ nevertheless, that the recent legislation of the federal government in congress is more severe than that of the separate states, either before or since the revolution of 1776. Prosecutions for all capital offences, except for wilful murder and forgery, are limited to three years after the offence was committed; and for offences less than capital to two years, unless the person flees from justice. Imprisonment under game and vagrant laws are unknown. Colonies of convicts have not yet been established,** with all the horrors attendant upon communities of unrestrained men, necessarily disproportioned in number to females, and of dishonest people, neither corrected nor discountenanced by an ordinary proportion of individuals of good principles.

The system of the best American penitentiaries has at length, after many disappointments and much controversy, reached the great excellencies of restoring many of the inmates to society in an improved condition, both as to character and morals; and also of defraying the charges of the prisons by the reformatory labour of the prisoners. The history of this system is one of the most interesting examples of the perseverance and good feeling of the people of the United States; and it is with regret that we can do little more than allude to it. William Penn early instituted in Philadelphia solitary confinement and labour for the punishment of death, with the best

* It deserves to be recorded, to the honour of the United States, that the practice of privateering has been abandoned by the Americans in a treaty with one European power; and that they have earnestly sought to impose further restraints upon this barbarous practice by similar treaties with other powers.

† North American Review for January, 1825, p. 66.

‡ Judge Story's Address to the Suffolk Bar. American Jurist, No. 1. p. 15; and see the passages in the last note to this chapter.

§ First and Second Reports of the Inspectors of the Eastern State Penitentiary of Pennsylvania. Philadelphia, 1831, p. 11.

¶ Remarks on the Expediency of Abolishing the Punishment of Death. By Mr. Livingston. 1822, and reprinted in Philadelphia, 1831.

¶ The skilfully drawn statute of 1825, commonly called Mr. Webster's Crimes' Act, awards death to those who set fire to dwelling-houses in dock yards, or to government vessels, although no life be lost by either crime; but those who commit arson in other circumstances, or who forge on the public, or who plunder ships, or use dangerous weapons, with intent to murder, but no death ensues, are by this statute made liable to limited fines and imprisonment only.

** It has, however, been proposed to form a convict colony under

the most dangerous circumstance of permitting the convicts to govern themselves, uncontrolled, after transportation. The commissioners on the penal code of Pennsylvania, in 1828, reported upon this proposal in the following terms:—"We should have little to remark upon this method of punishment, were it not that it has recently been pressed upon the legislature and the public by some of our active and well-intentioned citizens. It has been suggested that the objects and ends of punishment might be attained, were the government of the United States to take possession of some uninhabited island, such as the Island of Tristan da Cunha, in the Atlantic Ocean, where the states might leave their convicts, with a stock of food and tools, to their own exertions." The commissioners justly conclude, that the objections to the scheme which they set forth will prevent its adoption.—*Pennsylvania House of Representatives' Report, 4th June, 1828, p. 9.* A like proposal was half adopted by the English government fifty years since, and stopped by proceedings in the house of commons.—*Commons' Journals, vol. xl.*

In regard to the New South Wales transportation system, the Americans seem to appreciate its evils both in point of expense, and in point of incapability to reform offenders.—*Report of the Commissioners, p. 11.*

effects. His views were disapproved in England, and the common law was restored to supersede his innovations, when crime increased. In 1786, labour alone, upon the public works, was inflicted upon capital criminals; and the decrease of offences was not rapid. But after 1790, the rule of solitary confinement, along with labour, was revived, when, from that year until 1793, out of 200 convicts who underwent this discipline and were pardoned, four only were recommitted, and crime generally decreased, although the population daily increased. After 1793, this prison became crowded, and the separation of the prisoners from each other could not be accomplished. The consequence was an increase generally of criminals. "This double result," says Mr. Livingston, to whom we are indebted for these facts, "of a rapid and before unheard-of decrease whilst the convicts were both separated and employed, and an increase when they were suffered to associate, seems to solve the great problem of penal jurisprudence, and points to seclusion and labour as effectual remedies for the prevention of crime; for these effects were produced without any change in the state of society at the two periods that could be favourable to such results."* "In all the other states," he continues, "a similar result has been observed. During the first year, when there was room for classification, the most sanguine hopes of humanity were surpassed by the effect. But, with the promiscuous intercourse of the convicts, offences increased both in number and in atrocity." He therefore insists upon the necessity of classifying the various denominations of prisoners; and also of employing them profitably to themselves as well as to the state, in labour of the hands, of the heart, and of the mind; and completes his benevolent and statesman-like design in the following terms: "To avoid a relapse, an asylum is provided in the house of refuge and industry. Here the discharged convict may find occupation and subsistence, and receive such wages as will enable him to remove from the scenes of his past crimes, place him above temptation, confirm him in his newly acquired habits of industry, and cause him safely to pass the dangerous period

between the acquisition of his liberty and restoration to the confidence of society. Independently of this resource, the industrious convict receives at his discharge a proper proportion of his surplus earnings, he receives friendly advice as to his future pursuits, and a certificate, if merited, of such conduct as will entitle him to confidence. The consequences of his reconviction are solemnly represented to him, and his conduct, if he remain in the neighbourhood of the prison, is carefully watched, so that, if he return to habits of idleness and intemperance, his career to crime may be stopped by commitment to the house of industry as a vagrant."†

Upon similar views, to a certain extent, with those of Mr. Livingston, many penitentiaries have been built with the best effects.‡ If their projectors are favourably circumstanced in regard to the value of labour, the cheapness of which in England is a great difficulty in prison discipline, in an economical light, they deserve our unqualified respect for persevering through many intrinsic difficulties in the nature of bad habits and crime, so as unquestionably to have proved that men of the most desperate character may be reformed by steady care, and liberal and just coercion. The grand proof of this rests upon the fact of the inmates of the American penitentiaries becoming again offenders in a proportion incomparably less than those who are not, either in America or other countries, subjected to reformatory penitentiary discipline. Whipping is abolished in New York, and in other states earnest endeavours have been made for its abolition. On the subject of whipping, Mr. Livingston's argument deserves the deepest attention on the part of all European governments. In the comparative view of the punishments annexed to crime in the United States and in England, by Mr. Sydney Taylor of the Middle Temple, which has been published by the Society for Diffusing Information on Capital Punishments, it is well remarked, that "although the legislators of the United States deserve credit for the improvement which they have introduced in their criminal laws, perhaps it would have been better to have repealed the old English laws, and to have commenced a new structure on a

* Livingston's Introductory Report, folio, p. 5.

† Ibid., p. 51.

‡ The great model penitentiaries in the United States are at Sing Sing, Auburn, and Wethersfield; but many others are rapidly springing up in all parts of the union. The best approved system is briefly this:—to employ the prisoners in quietness and silence, in various labours, part of the profits of which is given to them on being discharged with good character; to separate them completely from each other at night, and much during the day; to instruct them in trades, in letters, and in religion; to treat them with gentleness, but firmly; and to promote their re-establishment

in society after being released. The results at Auburn may be taken as an example of the success of this system: there, out of 600, only 17 have committed new offences during a considerable time after being released; and out of 206 of those who have undergone punishment in this prison, 146 well authenticated cases of reform have been recorded, which results have been justly held forth to the consideration of the British public, in the Eighth Report of the Prison Discipline Society; whilst the system is at length brought under discussion in a committee of the house of commons on secondary punishments.

more civilized system; as Mr. Livingston's code for Louisiana, which has departed from the old system altogether, approaches nearer to excellence than any of the most improved editions of the original model. The criminal laws of the United States are not entirely free from the imputation of confounding offences of distinct characters; but they have, at least, partially achieved what the English parliament has wholly neglected—the establishing a gradation of punishment according to the degrees of guilt.”

This discipline is not yet probably adopted upon a sufficiently extensive scale throughout the union, to occasion the general low state of crime there. The fact, that in several of the states criminals are only in the very small proportion of 1 to 5,000 and 1 to 3,000 of the population, is, doubtless, chiefly attributable to the abundance of employment at the command of the poorest, and to the anxious care bestowed by the public upon the instruction of the most destitute and ignorant. It would therefore be too much to attribute the paucity of criminals in the United States to the mildness of the law. But the fact of that paucity is certainly honourable to the character of the law, as well as to many other circumstances in the condition of the people. Although the whole number of crimes and misdemeanours committed yearly cannot perhaps be exactly ascertained, the amount may be safely conjectured from the following facts: In July, 1826, out of a population of 946,133, in all the counties except seven in Pennsylvania, the number of persons, tried and untried, in prison, was 284, of whom, as near as could be fixed, 221 were males and 45 were females. The number of them born in Pennsylvania was 131; of those from other states of the union 82; and 35 were foreigners. The whites were 183 in number; the people of colour and blacks were 83. This is one to above 3,600, tried and untried; a proportion scarcely to be paralleled in the records of any other people.

In one of the states, and perhaps in others, there is the very important institution of what is designated an examining-court, which takes cognizance of criminal cases in an earlier stage than can be convenient to an ordinary court, and which is more solemn than the authority of a committing justice of the peace. The committing justice summons a bench of other justices, within ten days of the first disposal of the case, for the examination of the facts. This court considers whether the prisoners may be discharged from further prosecution, may be tried in the county court, or must be tried in the district courts. It is plain that this preparatory tribunal must add greatly

to the just and merciful administration of criminal law, an end also promoted in Virginia, the state in which it prevails, by power being given to two judges to bail any prisoner according to their discretion.

It is a point further deserving of notice, that recent laws have been made in some of the states, to enable juries to apportion punishment as well as to pronounce verdicts of guilty or not guilty.

In some of the states, laws have been applied to acts, which, in modern times, have either been left elsewhere to moral influence, or which have evaded the care of legislators in Europe. For example, in Pennsylvania, an habitual drunkard, found so by the verdict of a jury, loses the control of his children, whom the wife may, in his stead, bind apprentices. Several states have also passed laws to repress duelling, by disqualifying from public office all the parties to any duels, and by requiring persons entering on office to take an oath that they have not been, and will not be, concerned in a duel.*

The law officers are, an attorney-general for the general government, who receives 3,500 dollars salary, and 1,000 dollars for the salary of his clerk, and also attorneys for each of the districts and states, who are paid small salaries, and settled fees for the business done by them. These law officers are efficient and zealous prosecutors in all cases of felony whatever, and in all misdemeanours that concern the public. Voluntary societies also take upon themselves the task of aiding the public prosecutors in repressing offenders, and the parties injured may likewise prosecute them. In some of the states no ex-officio informations can be exhibited to subject any person to imprisonment, or to ignominious punishment. The duties of law officers, however, seem to stand in the same undefined situation with those of the attorney-general in England and in the English colonies;† but the expense of criminal prosecutions is borne chiefly by the public.

The police consists of ordinary constables and justices of peace; the latter having the power, upon emergencies, of summoning the posse comitatus to act as special constables. All the power of the constables, and most of that of the justices, resembles that with which the common and old statute law respecting public tranquillity invests the same authorities in England. For various local arrangements considerable authority is also given to selectmen; and the justices have civil jurisdiction, without a

* Virginia Laws for 1830, sect. 3.

† Journals of the Massachusetts Convention of 1820, pp. 211, 213, 258.

jury or strict forms of pleading, in cases under twenty dollars, with criminal jurisdiction in some of the states, also without a jury, in small thefts, and over light offences by young persons, who, however, are then only punishable by imprisonment for short periods of time. The people control all these functionaries, either directly by annual elections, or indirectly by electing the higher functionaries who appoint them.

The military power is vested in the government of the union, not in the separate states, the president being commander-in-chief; but the right to have arms is not taken away from individuals; and each state bears the expense of many military equipments. The regular army is subject to laws passed by congress; and all free, able-bodied, white male citizens, between the ages of eighteen and forty-five, are bound to have a musket, or rifle, and proper accoutrements ready for service in the militia, of which the privates elect their captains and subalterns, and the latter their field-officers. In the militia there must be a proportionate number of horse and artillery:—The time of service is limited to three months in the year; and to a due rotation of the individuals enrolled. The president of the United States may call them out at his discretion, in cases of invasion, or of imminent danger of invasion; and at the discretion of the legislature, or executive councils of the separate states, in cases of insurrection. Whenever, also, the laws are opposed or obstructed by combination too powerful to be suppressed by the ordinary course of judicial proceeding, or by the powers vested in the marshals, (the sheriffs,) the president may call out the militia; but he must, by proclamation, command the insurgents to retire peaceably to their homes, within a limited time; and the militia are not to be kept embodied in this case more than thirty days after congress shall meet. The soldier in the United States, as in England, is bound to obey only lawful commands; and he acts there, as here, on his own responsibility, not exclusively on that of his officer. The rash interference of soldiers in riots is more expressly guarded against in America than in England.

The subject of codes of law has obtained deep consideration in the United States. Although Mr. Bentham's views* have not been adopted there, they have not failed to make a great impression: but the difficulty of it has prevented much more being accomplished than the accumulation of materials for the use of another generation. One individual, of well-deserved and high reputation, Mr. Edward Liv-

ingston, has done great things for Louisiana on this head, in regard to the criminal law; and in civil jurisprudence the Code Napoleon has been adopted in that state with comparatively few alterations.† By a law of 1829, the legislature of Louisiana appropriated “4,500 dollars to Mr. Livingston, for services in compiling the criminal code and code of evidence, leaving the subject of further compensation open for future consideration.”‡ The early views of the leading statesmen in America on this subject are recorded by president Jefferson as follows:—“Whether we should undertake to reduce the common law, our own, and so much of the English statutes as we have adopted, to a text, is a question of transcendent difficulty. It was discussed at the first meeting of the committee of the revised code, in 1776, and decided in the negative.§ We met in January, 1777, to settle the plan of operation, and to distribute the work. The common law, and statutes to the 4th James I., when our separate legislature was established, were assigned to me; the British statutes, from that period to the present day, to Mr. Wythe; and the Virginia laws to Mr. Pendleton. . . . We were employed in this work to February, 1779, when we met and examined critically the several parts, sentence by sentence, scrutinizing and amending, until we had agreed on the whole. We had brought so much of the common law as it was thought necessary to alter, all the British statutes, and all the statutes of Virginia, which we thought should be retained, within the compass of 126 bills, making a printed folio of ninety pages. Some bills were passed, but the main body was not entered on by the legislature until after the general peace in 1785, when, by the unwearied exertions of Mr. Madison, in opposition to the endless quibbles, chicaneries, perversions, vexations, and delays of lawyers and demi-lawyers, most of the bills were passed by the legislature with little alteration.”|| Of later years much more has been accomplished. In New York and in other states, many debates have been had, and valuable volumes have been published by authority, in order to simplify the law. In Pennsylvania, in 1830, three commissioners were appointed to collect into one act the different acts requiring consolidation; to divest such acts of all redundant phrases; to distribute the acts systematically; to omit all that were repealed, or repeated, or expired; to suggest to the legislature imperfections, with the means of correcting them: and the same commissioners were to report whether it would be expedient

* Mr. Bentham's work on legislation has, however been translated from the French by an American.

† American Jurist, No. I. p. 32.

‡ American Jurist, No. III. p. 188.

§ Jefferson's Correspondence, vol. iv. p. 183.

|| Ibid. vol. i. p. 37.

to introduce any, and if any, what change, in the forms or mode of proceeding in the administration of the laws.

It will be a proper conclusion to the foregoing views of American laws, intimately allied as they are to those of England, to notice the manner in which the ablest writers, and the greatest lawyers amongst these kindred* foreigners, have expressed their respect for the first of English judges and jurists. The most important accounts of Sir Edward Coke and Lord Bacon will be found written by Americans;† the great legal fathers also of modern liberty, Lord Somers, Sir John Holt, and Lord Camden, have met with more practical and devoted homage in America than at home; and the just legal fame of Lord Eldon, Lord Stowell, and Lord Mansfield, incomparably the first of modern names in the law, has been nowhere more fairly estimated, or more eloquently acknowledged, than by the greatest American lawyers;—lawyers, however, who, as citizens, were at the same time

* This is not a mere figure of speech, as an American naturalized by act of parliament might perhaps acquire greater English capacities than any other foreigner.—*Sir Orlando Bridgman's Reports*, p. 633.

† North American Review.

‡ Speech upon American Taxation.

§ Tudor's Life of Otis, p. 10.

¶ The spirit of the best of their fathers has not been lost on modern American lawyers. In remarking upon the independence of the judges, Mr. Webster, of Massachusetts, with just discrimination, observes, "I know not whether a greater improvement has been made in sound government, than to separate the judiciary from the executive and legislative branches, and to provide for the decision of private rights in a manner wholly uninfluenced by reasons of state, or considerations of party or policy. It is the glory of the British constitution to have led in the establishment of this most important principle. It did not exist in England before the revolution of 1688, and its introduction has seemed to give a new character to the tribunals. In matters of mere property, in causes of no political or public bearing, the judges, before this event, might perhaps be safely trusted; but in great questions concerning public liberty, or the rights of the subject, they were, in too many cases, not fit to be trusted at all. Who would now quote Scroggs, or Saunders, or Jeffries, on a question concerning the rights of the habeas corpus, or the right of suffrage, or the liberty of the press, or any other subject closely connected with political freedom? Yet, on all these subjects, the sentiments of the English judges since the revolution,—of Somers, and Holt, and Jekyl, and others,—are, in general, favourable to civil liberty, and deserve and receive great attention whenever referred to."—*Debates in the Massachusetts Convention of 1820*, p. 217.

Another testimony from an older tongue is more important. It has been attempted to pay a just tribute of applause to the important improvements made in the state of commercial laws by Mr. Justice Story, of the supreme court of Washington, in his editions of Lord Tenterden's "Law of Shipping." Models for a better eulogy upon him, may be found in the approbation which that very learned judge has bestowed upon English lawyers. After making an original sketch of the earlier progress of our jurisprudence, he proceeds in the following words:—"It was reserved for Lord Hardwick, by his deep learning, his extensive researches, and his powerful genius, to combine the scattered fragments of equity into a scientific system; to define with a broader line the boundaries between common law and chancery; and to give vigour and certainty to the principles as well as to the jurisdiction of the lat-

willing to put their lives at hazard in a noble opposition to the unfortunate views of Lord Mansfield, Lord Stowell, and Lord Eldon, on questions of civil policy. The leading principles of English law, and the great names in our jurisprudence, are familiar in America as "household words." The observations of Mr. Burke upon this subject are well known;‡ and American biography since his time has produced a curious confirmation of the justice of Mr. Burke's testimony to the eagerness with which Americans, before the revolution, hailed the Commentaries of Sir William Blackstone. The author of the Life of Otis§ states, that this able and patriotic lawyer, in conversing with his brother on the subject of the study of the law, and speaking of the books written upon the science, and its modern improvements, said, that "Blackstone's Commentaries would have saved him seven years' labour poring over and delving in black letter."||

It is indeed, a highly gratifying circumstance, that

ter. Henceforth, equity began to acquire the same exactness as the common law; and at this moment, there is scarcely a branch of its jurisprudence that is not reduced to method, and that does not, in the harmony of its parts, rival the best examples of the common law. Our own age has witnessed, in the labours of Lord Eldon, through a series of more than twenty-five volumes of reports, a diligence, sagacity, caution, and force of judgment, which has seldom been equalled, and can scarcely be surpassed; which have given dignity as well as finish to that curious moral machinery which, dealing in an artificial system, yet contrives to administer the most perfect of human inventions, the doctrines of conscience, *ex æquo et bono*."

Again,—“How few have read with becoming reverence and zeal, the decisions of that splendid jurist, the ornament, I will not say of his own age or country, but of all ages and of all countries; the intrepid supporter equally of neutral and belligerent rights; the pure and spotless magistrate of nations, who has administered the dictates of universal jurisprudence with so much dignity and discretion in the prize courts of England! Need I pronounce the name of Sir William Scott?”

“There is another great name respecting whom it is difficult to speak in terms of moderate praise, and still more difficult to preserve silence. England and America, and the whole civilized world, lie under the deepest obligations to him: wherever commerce shall extend its social influences,—wherever justice shall be administered by enlightened and liberal rulers,—wherever contracts shall be expounded upon the eternal principles of right and wrong,—wherever moral delicacy and juridical refinement shall be infused into the municipal code, at once to persuade men to be honest, and to keep them so,—wherever the intercourse of mankind shall aim at something more elevated than that grovelling spirit of barter, in which meanness and avarice and fraud strive for the mastery over ignorance, credulity, and folly,—the name of Lord Mansfield will be held in reverence by the good and the wise, by the honest merchant, the enlightened lawyer, the just statesman, and the conscientious judge. The maxims of maritime jurisprudence which he engrafted into the stock of the common law, are not the exclusive property of a single age or nation, but the common property of all times and all countries. They are built upon the most comprehensive principles, and the most enlightened experience of mankind. He designed them to be of universal application, considering, as he himself has declared, the maritime law to be not the law of a particular country, but the general law of nations. And such, under his administration, it became, as his prophetic spirit, in citing a passage from the most

the lawyers of the United States cherish a disposition to extend the bounds of the science beyond domestic learning, and to improve their own jurisprudence by the study of that of other nations, ancient and modern. The effects of this excellent spirit cannot fail to be to relieve society more and more from the scourge of uncertainty to which all laws have hitherto been exposed; and hereafter to enable a well-informed people to collect a comparatively simple system from the multitude of entangled rules and statutes now every where prevalent. Although law reform is still in its infancy throughout the union, materials are in the course of accumulation which must lead to great results. The repository of the judgments of the numerous local courts daily improves the judges and the people; and the visibly increasing excellence of the American reports, although, like the independent states, but of recent creation, shows that legal learning is spreading every where in a degree perfectly new to mankind. The reports are the more valuable, as they contain the *written* decisions which it is the very general practice of the judges to deliver on important occasions. The establishment, also, of official reporters, such as Lord Bacon recommended in vain for Westminster Hall, is favourable to the greater exactness of the reports; and the freedom and activity of the law press, as well as of the press generally, which was wanting in Lord Bacon's time, will

eloquent and polished orator of antiquity, seems gently to insinuate: *Non erit alia lex Romæ, alia Athenis; alia nunc, alia posthac; sed, et apud omnes gentes et omni tempore, una eademque lex obtinebit.* Lord Mansfield was ambitious of this noble fame, and studied deeply, and diligently, and honestly, to acquire it. He surveyed the commercial law of the continent, drawing thence what was most just, useful, and rational; and left to the world, as the fruit of his researches, a collection of general principles, unexampled in extent, and unequalled in excellence. The law of insurance was almost created by him; and it would be difficult to find a single leading principle in the beautiful system that surrounds and protects the commerce of our times, which may not be traced to the judgment of this surprising man. Of him it can not be said, '*Stat magni nominis umbra.*' His character as a statesman and an orator, as the rival and equal of Chatham and Camden, would immortalize him. But the proudest monument of his fame is in the volumes of Burrows and Cowper and Douglas, which, we may fondly hope, will endure as long as the language in which they are written shall continue to instruct mankind."—An address delivered before the members of the Suffolk bar, at their anniversary, on the 4th of September, 1821, at Boston, by the Honourable Mr. Justice Story.—*American Jurist*, No. I. p. 8.

A more recent tribute to England is perhaps even worthier of being recorded, as it boldly unites the best names of both countries: "Let us imitate the example of illustrious predecessors, (says the writer;) of Coke, in his industry, who thanked God that he never gave his body to physis, his heart to cruelty, nor his hand to corruption; of Hale, the proudest, because the purest name in English history, 'of unblemished integrity and uprightness in every character in life, of generous frankness and open sincerity in conversation, of unalterable adherence in all stations to the principles of civil and religious liberty, accompanied with a serious regard to true piety;' and, in the words of Baxter, 'that unwearied student, that solid philosopher, that famous lawyer, that pillar and basis of

tend to check indolence, and to add to the efficiency of these reporters.

The increase of litigation is often urged as a consequence of the cheapness of law, and of the multiplicity of tribunals scattered over the United States. The existence of the fact may be doubted: the doing of justice is greatly increased, but not litigation. It is not easy to form an accurate and comparative estimate of the amount of business done in the courts, and out of the courts, by lawyers and judges in any two countries; but if the judges are more numerous in America than in England, it is a most important point in the comparison, that the practitioners of the law are fewer in number; and, by the union of the different branches of the practice in the same individuals, they are generally a more learned and more respectable class of men. In a work of good repute, the result of careful calculations is, that whilst in England and Wales there is one lawyer (barrister, conveyancer, special pleader, solicitor, attorney, advocate, or notary,) to every thousand persons, in the United States, the average is one to every seventeen hundred persons. It is probable that the good old practice of uniting the two branches of attorney and barrister in one person elevates the general character of lawyers, and lessens litigation.

Students* generally attend at the offices of established practitioners, but law schools are increasing;

justice, who would not have done an unjust act for any worldly price or motive,—the ornament of His Majesty's government, and honour of England, the highest faculty of Westminster Hall, and pattern to all the reverend and honourable judges,—that godly, serious, and practical Christian, the lover of goodness and all good men, a lamenter of the clergy's selfishness and unfaithfulness and discord! Let us imitate the example of Selden, Clarendon, Holt, Hardwick, Nottingham, Mansfield, Thurlow, Sir William Jones, and the host of worthies, the lights of Westminster Hall; and of our distinguished men in the profession, who have done so much for themselves and the country; and dwell upon the recollections of the gifted jurists who aided in the cause of our revolution, and in the establishment of our frame of government,—of Hawley, Otis, Adams, Quincy, Ellsworth, Hamilton, Jay, Wythe, Jefferson, Lee, Randolph, Henry, Parsons, Gore, Ames, Dexter, King: it was the men of this cast who in stormy periods girded on the armour, and subdued might to the empire of justice. They were of that popular cast, answering the description of James, who, when the twelve judges were brought before him, in the case of the Commendams, declared, 'that ever since his coming to the crown, the popular sort of lawyers had been the men that most affrontedly had trodden upon his prerogative.'—*Mr. Willard's Address to the Worcester Bar, Massachusetts, 1829.*

* The following rapid sketch of the tuition of an American lawyer, "Edward Jackson Lowell, a member of the Suffolk bar," in Massachusetts, is contained in an interesting notice of one who was lost too early to his country and friends. "Five years and a half spent in the college and law school of Harvard University; a winter attendance upon the lectures and private instruction of (the retired) Chancellor Kent; a year in a counsellor's office in Boston; two years spent in study and travel in Europe; and two years of professional seclusion and study, excepting the interruptions of sickness, fill out the short and simple outlines of his life. While in France, he took an instructor in the civil and French,

"and," said Dr. Du Ponceau, in 1824, "the most exalted characters do not disdain to fill the professors' chairs. Until lately, the only institutions of this kind were two in Massachusetts, one in Connecticut, and one in Philadelphia: there are now established two in Kentucky. In the university of New York, the Hon. James Kent, during many years the distinguished chancellor of that state, and whose name and talents will long be venerated, fills the chair of jurisprudence. At Baltimore, Professor Hoffman, and at Northampton, Judge Home, and Mr. Mills, a member of congress, lecture with success to considerable numbers of students."* Since the publication of Dr. Du Ponceau's Book, law schools and law professorships have been established at various other places; of these, one professorship, founded by a distinguished lawyer, and filled by a distinguished judge, requires especial notice: Mr. Dane, one of the fathers of the Revolution, has dedicated the profits of his valuable Digest to a chair of jurisprudence at the university of Cambridge, in Massachusetts; and he has had the good fortune to be able to appoint Mr. Justice Story as his first professor. The professor's eulogy of his founder is singularly happy, in the application of Lord Hale's character of Rolfe, the learned chief-justice of the English Commonwealth:—"He argued frequently and pertinently; his arguments were fitted to prove and evince, not for ostentation; plain, yet learned; short, if the nature of the business permitted, yet perspicuous; his words few, yet significant and weighty; his skill, judgment, and advice in points of law and pleading, were sound and excellent. In short, he was a person of great learning and experience in the common law, of profound judgment, singular prudence, great moderation, justice, and integrity."† Mr. Story himself, after securing the respect of one generation as a judge, like Chancellor Kent, will earn the gratitude of another as their teacher. The character of what the American youth are learning by such means will be best understood by a special notice of this eminent professor's inaugural address. After expatiating, in the manner of Blackstone, upon the great importance of legal knowledge to the citizens at large, the discourse is solemnly addressed to those who study the law as a profession, and holds forth the highest motives to arduous application, with large and comprehensive views of the

law; and, both in France and in England, he attended the courts and legislative assemblies, and paid great attention to the history, the theory, and the operations, of their political and legal institutions. He died at the age of twenty-five years, and almost at the very hour when he was to have performed his first act of professional duty, and after having lived a life, which, though undistinguished by public exertion, made it privately known exactly how

science, reminding the student that it is insufficient to be "the sharp and cunning pettifogger, a retailer of lawsuits, 'a canter about forms, and a caviller upon words,' described by Cicero. God forbid that any man, standing in the temple and presence of the law, should imagine that her ministers were called to such unworthy offices."‡ The all-pervading and all-controlling influence of the administration of the laws upon the welfare of communities, and, most of all, of republics, is then dwelt upon with great power; and the members of the profession are reminded that they are the guardians and sentinels of the purity and integrity of its administration, in defence of which, against the popular attacks of the moment, they are bound to sacrifice, if needful, their own popularity, and should glory in the sacrifice. The advocate is also called upon to vindicate the laws from the attacks of the government itself. The discouragements and the long-enduring labours through which the path to eminence lies, are then portrayed to students; and they are cautioned against indulging "the belief, that fluency of speech, a kindling imagination, ready wit, graceful action, and steady self-confidence, will carry them through the struggles of the law."§ In the wise spirit of Judge Story's address, Otis had a century before urged the necessity of various and deep learning to the American lawyer;¶ and, in 1760, the eloquent Patrick Henry, although an unlearned student, obtained admission to the bar of Virginia, upon proof of his extensive knowledge of the laws of nature and of nations, of the feudal system, and of general history.‖ Eminent writers in the United States have fairly vindicated their countrymen from all reproach of neglecting the study or improvement of jurisprudence: by no people has so much been done in so short a time; and a long catalogue of their elementary writers, of their reporters, and of their laws, might be quoted to their great honour.

To these sources of legal and constitutional knowledge must be added the two remarkable facts, that about fifty millions of copies of newspapers are issued in the United States in the year, in which constitutional and legal reports and papers are published without limit. The local legislatures afford scope for discussion and deliberation to more than 3,500 members on the most important topics; and at least

he would have performed that duty."—*Jurisprudent*, No. 9. Boston, 1828.

* Dr. Du Ponceau on Jurisdiction, Philadelphia, 1824, preface p. 19.

† The American Jurist, No. 4. 1829, p. 407.

‡ Tudor's Life of Otis, p. 10.

§ Ibid. p. 253.

‖ Wirt's Life of Henry, p. 17.

30,000 verdicts of juries are said to be returned yearly in the civil and criminal courts—circumstances which show the extent to which the minds and passions of men must be exercised in the United States, where, as well as in the legislative assemblies, all transactions are conducted with great publicity. It was one of the fruits of the revolution of 1776 to open all the legislative assemblies to the public as hearers; previously, the sittings had been for the most part close. But so early as 1776, the house of assembly of Massachusetts, at the beginning of the great struggle, opened “a gallery for such as wished to hear the debates.”* Law reporting is also more and more provided for by the state governments. In 1831, the legislature of Illinois directed 150 copies of the reports of their supreme court to be bought by the public. In 1830, Alabama voted 800 dollars a year to the reporter of the supreme court; and the like occurs in most parts of the union, in the best spirit of Lord Bacon’s advice in England two centuries ago.

In America, as elsewhere, valuable law manuscripts exist, the careful publication of which would give certainty upon many points not likely otherwise to be rescued from the influence of doubt, and, worse—discretion. Such materials must abound in the United States, upon a particular class of cases, as interesting to them historically as to Great Britain legally. Until the revolution in 1776, frequent appeals were made from the colonies, on various subjects, by petition to the king. These petitions were heard regularly at the Cockpit; and, for the most part, the leading lawyers of England were the advocates employed in these causes. The judicious course of Lord Somers in such a case, from Boston, has been noticed; and Lord Mansfield is known to have had great practice there. The subjects being rarely interesting to the English bar, a very few reports of the arguments are published in our law books; but it is clear that the agents of the transatlantic parties sent home large details of every thing that passed; and, in desultory notices of Privy Council causes in American books, there is proof that some of these details are preserved, as in Belknap’s and Hutchinson’s Histories of Massachusetts, and in the collection of the Boston Historical Society; to which society there were lately sent the printed briefs and petitions in the very curious Privy Council appeal of “The Last of the Mohicans,” an appeal which, in the fact of its having been seventy years before the English tribunal, furnishes a sufficiently clear illustration of

one cause of the ruin of the native tribes. These Privy Council proceedings are important in the United States as matter of constitutional and legal history; but to the existing English colonies the precedents which some of them would furnish of wise decisions, and the warnings which might be derived from the manifest errors exhibited in others, would be of the highest value.

In New England there are extant also manuscript law cases, taken before the Revolution, by such a man as Josiah Quincy, whose short report, written from London, in 1775, of a speech of Lord Chatham, is one of the most precious remains we possess of that great man’s oratory.

The manuscripts in England affecting America are numerous. One of Sir Matthew Hale’s, on the law of colonies, contains the following very curious passage:—“Concerning the plantations of Virginia, New England, Bermuda, and other islands and continents towards the West Indies, and, also, our plantations in Africa and the East Indies, the course of their acquisition was, that the King issued a commission to seize them; thus Virginia and New England were seized in 4 Jac. I.; Greenland and the northern plantations in 1 Phil. and Mar. pat. 3; the Carribee islands by Warner; and so divers others. Presently upon the acquiescence the English laws are not settled there, or at least only temporary, till a settlement is made; and therefore, we see there administration of justice and law much differing from the English laws; but the people carry with them those English liberties which are incident to their persons.”†

Another, respecting civil matters, is perhaps more curious, by containing one of the earliest suggestions for the settlement of the old colonies, as a means of humbling Spain, and of avenging the cause of the Elector Palatine, son-in-law to James I. This manuscript is from the first Lord Fairfax, a well-known name in Virginia. It urges by way of incentive to North American colonization, in the seventeenth century, that “in the glorious and happy days of Queen Elizabeth, frequent were the navigations of our worthy countrymen; every brave spirit was taken up with some action that deserves esteem;” concluding with the just boast,—“Let the same occasion be that was, and there will be found English blood in English veins still! The same that we received from our fathers, the same we will leave to our sons;”—a boast which those sons have, indeed, nobly vindicated.

* Tudor’s Life of Otis.

† Lord Hale’s Prerogative Regis.—British Museum :—Hargrave MSS. No. 81, p. 64.

To the foregoing very incomplete sketch of the constitution and jurisprudence of the United States, two concluding remarks remain to be added. The first is, that the essentially popular character of the constitution has led a greater number of disinterested men, than under any other form of government, to direct their faculties calmly to the consideration of the best means of acting upon, of improving, and preserving it:—the second, that in consequence of the steady and widely extended watchfulness of the people over all that concerns them, popular affections and direct popular intervention have become safe influences in public affairs; and a degree of certainty, at little cost, is thereby secured to the public peace, heretofore unknown to human institutions. So deeply do we feel that these great results are attributable in a high degree to the character of the government under which they are found, that it is most unwillingly we abstain from selecting, out of its legal history, many additional excellencies of the constitution of the American Union.

CHAPTER II.

RELIGION.

As the state of human society in regard to religion is unquestionably the most important aspect in which it can be viewed, so the state and progress of religion can be nowhere contemplated with more interest, or to greater advantage, than in the North American republic. We have not here to trace its influence upon savages, but upon civilized man; not upon uninformed and wandering tribes, the natives of the wild, but upon the population of enlightened states suddenly transplanted to its soil. We find this population, however, in a condition entirely new. Bringing with them the knowledge and the arts of civilized life, together with the principles of the civil, political, and religious economy of long-established kingdoms, they entered, not only upon the soil, but into the wild independence and unrestrained liberty of the savage. Released on the one hand from every thing which could have any tendency to render them either really or apparently religious, except the permanent force of truth and (under their circumstances) the diminishing power of habit, they may be considered as presenting a fair example of what habit and truth can effect, when separated from the artificial helps of legislative enactments, of an ennobled and wealthy priesthood, and of an imposing public ritual: released on the other hand from all which

might tend to fetter the free exercise of the understanding, and permitted, not only to choose for themselves in the first instance, but to make whatever alterations their experience might suggest, they may be regarded as having, for the first time, put to the test of common sense and practical utility, the forms both of religious sentiment and religious worship so long established—and because established revered—by the parent nations. The issue to which the question of a national church establishment has thus been brought is of great importance; and not less so is the aspect which the progress of religion has assumed, in the multiplication and extension of what has for some time been well known under the name of a revival.

It will, of course, be recollected by the reader, that the religious aspect of the United States is very far from being uniform. Different portions of the republic are characterized, not merely by less or greater degrees of religion, but by the prevalence of different religious sects. This has arisen principally from the manner in which the colonies, which are now cemented under the general title of the United States, were formed. Little or no progress was made in cultivating the transatlantic wilderness, until it became a refuge from persecution. It was natural that the first parties who went over on this ground should consist of persons of similar religious sentiments—of those, namely, which at that particular period exposed the holders of them to suffering; and when persons of a different creed became the victims of similar bigotry, in its capricious waywardness, they, in similar bodies, sought an asylum, not in the arms of those already banished, (where, indeed, it must be confessed, it would not then have been found,) but in some distant and unoccupied portion of the far-spreading shore. In this manner the states of Massachusetts, Rhode Island, Connecticut, New Hampshire, Maine, and Vermont, together forming what is familiarly known as New England, were colonized by the persecuted Puritans, and their religious condition bears the powerful impress of their origin to this day. Maryland was settled by Roman Catholics; Pennsylvania by the Quakers, (or Friends;) while episcopacy prevailed in Virginia, the Carolinas, and Georgia. Another circumstance contributing to diversify the religious aspect of the United States is, that several of the colonies comprehended in the republic were not of English origin. New York, New Jersey, and Delaware, were originally colonized by the Swedes and the Dutch; while Louisiana was long a possession of the French; and Florida is but recently acquired from Spain. The religious condition of

these states bears distinct traces of their origin, in the existence, in the former, of Dutch and Lutheran churches, and in the prevalence of popery, superstition, and infidelity, in the latter. A further cause of want of uniformity in the religious aspect of the republic, is the rapidity with which the settlement of new lands is perpetually going forward. Every year the immigrant population is pressing onwards in the western wilderness, and at a much swifter pace than the means of religious instruction. As you retire from the more populous towns and the longer-settled districts, these means become more and more scanty, until the border settlers are withdrawn from every thing external by which a sense of religion might be maintained, and abandoned, until lately, almost without an effort, to the prevalence of irreligion and vice.

Although our limits preclude us from attempting any thing like a history of religion in the United States, and equally from giving an extended account of particular sects, we have selected a few brief notices, which will give to our readers, we trust, a sufficient view of the existing religious bodies.

Not wishing to exhibit our own partialities, we begin with the Roman Catholics. A Jesuit priest accompanied the emigrants to Maryland in 1632; and from that date till the period of the revolution, the American Catholics in Maryland and Virginia were constantly served by Jesuit missionaries, successively sent from England. The Rev. Dr. John Carrol having been elected by the clergy the first bishop, through a special indulgence granted them by the pope, Pius VI., a see was constituted, and the bishop elect consecrated in England, August 15, 1790. In 1810, the increase of the Romish communion had become so great in the United States, that it was judged best at Rome to erect the episcopate of Baltimore into a metropolitan or archiepiscopal see, and to establish four new suffragan dioceses; namely, Boston, New York, Philadelphia, and Bardstown in Kentucky. New Orleans, Charleston, Richmond, and Cincinnati, are now to be added to this list.* It appears that the court of Rome cherishes the hope of acquiring large accessions to its spiritual dominion in the United States, more especially from the western territory. Regular missions are established over the whole country, and the following language is held re-

specting them: "The missions of America are of high importance to the church. The superabundant population of ancient Europe is flowing towards the United States. Each one arrives, not with his religion, but with his indifference. The greater part are disposed to embrace the doctrine, whatever it be, which is first preached to them. We must make haste; the moments are precious. America may one day become the centre of civilization; and shall truth or error establish there its empire? If the Protestant sects are beforehand with us, it will be difficult to destroy their influence."† To these missions there was remitted from Europe in the year 1828, out of the funds of the Association for the Propagation of the Faith, nearly 5,000*l*. The methods adopted by the Catholics comprehend particularly establishments for education, from which they evidently expect much,‡ the formation of religious houses of a benevolent character, and the building of churches, "whose pomp and splendour form so striking a contrast with the barrenness and nudity of Protestant worship."§ These efforts of the Romanists have been attended with a degree of success, which, though by no means extraordinary, has greatly encouraged the papal court, and has of late been regarded with anxiety by the more public-spirited part of other communions in the United States. The number of persons who have embraced Romanism does not appear to have been ascertained; but "*the population belonging to this church*," (a phrase of great latitude and vagueness,) at the highest of the various estimates which have been formed of it, has been computed at half a million.¶ We see nothing in this more than commensurate with the well-designed efforts and the devoted zeal which have been applied to the work, especially when combined with the extreme neglect with which the population of the western territory has been treated by other religionists, and the skilful adaptation of the papal system to the corrupt heart and proud imaginations of mankind. When American evangelical writers talk of contemplating the extension of popery with grief, we are ready to ask them, why they did not view with equal grief the indifference and irreligion which were long before prevalent, and which were in themselves equally afflictive; and when they speak of it as a matter of humiliation that such a system should be

* The entire number of Catholic bishops throughout the states is fifteen.

† Annales de l'Association de la Propagation de la Foi. Paris, 1829.

‡ "These establishments do wonderful good: Catholics and Protestants are admitted indiscriminately; the latter, after having finished their education, return to the bosom of their families, full of esteem and veneration for their instructresses. They are ever

ready to refute the calumnies which the jealousy of heretics loves to spread against the religious communities; and often, when they have no longer the opposition of their relations to fear, they embrace the Catholic religion."—*Ibid*.

§ *Ibid*.

¶ Quarterly Journal of the American Education Society, vol. ii. p. 199.

capable of diffusing itself in such a country as theirs, we may suggest, as a still more proper topic of abasement, the supineness of those who, having light in their dwellings, have been pitiless of them that sat in darkness and the shadow of death. There is reason to believe, however, that the depth of this sleep is past; and we shall have occasion to notice, before we close this article, some recent exertions of great energy and promise in this direction.

The number of Episcopalians among the settlers in the United States, was small; in Maryland and Virginia, however, many churches were early formed, and had legal establishments for their support. The organization of the episcopal church in America took place after the revolutionary war. The Rev. Samuel Seabury, D.D. of Connecticut, was consecrated at Aberdeen in Scotland, in November, 1784, by the Scotch bishops; Bishop Provost and Bishop White, of Pennsylvania, in 1787, by the Archbishop of Canterbury. Since that time, the number of Episcopalians in the republic has constantly increased, and they are now found in all the states.* The colleges of Washington in Connecticut; Columbia in New York city; Geneva, New York; the University of Pennsylvania; William and Mary College, Virginia; and Kenyon, Ohio, are institutions under their control. Their dioceses are fifteen, bishops ten, and clergy five hundred and twenty-eight. American episcopacy, though it was derived from this country, has been so greatly modified by its separation from state patronage, and is so very unlike its still venerated parent, that we may perhaps gratify our readers, especially those of the same faith, by a brief sketch of its constitution. The highest spiritual capacity known is, of course, a bishop. Priests and deacons, being all the orders named in the Bible, are the only other orders known or used in America. The supreme authority is exercised by the general convention, which is composed of two bodies,—a house of bishops, and a house of lay delegates. Each diocese has a convention for the regulation of its own affairs. The general convention consists of the bishops, who form the house of bishops, and of laymen, who are sent as delegates from the state conventions. The object of this body is to promote harmony and uniformity of doctrine in the whole church. The state conventions contain the clergy of the diocese, and a lay delegation from each church. In both conventions, the clergy (or bishops, as the case may be) and the laymen vote separately, a majority of both being necessary to an ordinance. Clergymen

are presented by their congregations, and bishops are elected by the conventions of the diocese, and are approved of by the house of bishops. There is no salary yet given to any bishop, though provision, to a reasonable amount, is making for that object; at present they are all rectors of churches. The oldest bishop for the time being is called the presiding bishop, though he enjoys no exclusive authority. The influence of republican institutions, even upon episcopacy, is here decidedly manifest. With the same name, this is obviously a very different thing from English episcopacy: the people uniformly choose their own ministers; the bishops are elected by a process in which, by their delegates, the laity have a voice; and no salaries are independent of a similar vote. It is well known that the Episcopalians of the United States look with no complacency on the golden fetters of their parent church; and it may be matter of some surprise how the admirers of the English hierarchy can delight themselves in the prosperity of a scion, which, while retaining an identity of denomination, has adopted what they must consider so dangerous and mischievous a principle, as the popular nomination to ecclesiastical offices and appropriation of ecclesiastical funds.

The first Presbyterians in America came from England, Scotland, and Ireland, about the year 1700, and settled in what is now a part of New Jersey and Delaware. The first presbytery was formed about 1706; the first synod, that of Philadelphia, in 1716; the general assembly in 1788. The essential features of Presbyterianism are the following:—1. The parity of its ministers. It recognizes but one order of ministers or presbyters, who receive their authority primarily from the Lord Jesus himself, and have power afterwards to confer this authority upon their successors. 2. The order and co-operation of ruling elders. They are properly the representatives of the people, chosen by them for the purpose of exercising government and discipline, in conjunction with pastors or ministers. 3. The union of its churches under courts of review and control. The general assembly of this church in the United States has under its care—synods, 20; presbyteries, 104; ministers, 1,800; churches, 2,250; communicants, 182,000. Of the ministers, forty are either presidents of, or professors in, theological or literary institutions, and fifteen foreign missionaries. In February, 1810, the Cumberland Presbytery was formed in Tennessee without any connexion with the Presbyterian church, principally because the synod of Kentucky refused to license ministers to preach the gospel without a classical education. This was at a period of considerable

* The present house of bishops is at this time (June, 1834) composed of sixteen bishops.

religious excitement, when the labours of clergymen were in great demand. They dissented also in some respects from the confession of faith of the general assembly, particularly in regard to the doctrines of reprobation, limited atonement, &c. At first there were but nine preachers in the connexion, four only of whom were ordained. They have now a synod, consisting of several presbyteries.

The Congregationalists, although principally abundant in New England, have a number of churches scattered over other parts of the country. The fundamental principle of Congregationalism, and that from which the name is derived, is, that each congregation, assembly, or brotherhood of professed christians, meeting together for religious purposes in one place, is a complete church. It may commune with other churches, but it is a church of itself, and not by virtue of any connexion with another body of christians. It has the right, under Christ, to appoint its own officers, to discharge the duties of worship, to observe the instituted sacraments, and to exercise discipline upon its own members. The name *Independent*, which has sometimes been applied to these churches, has been objected to as inapplicable, because "they hold friendly mutual intercourse for various purposes," and are only independent as to authoritative control; but this, so far as we understand it, is the exact meaning of the word *Independent*, as the denomination of a religious body, and the term seems to be just as applicable to the American Congregationalists as to the body who have long been designated by it in Britain. An account of the emigration of Mr. Robinson and his church, from whom the Congregationalists of the republic took their rise, will be found in a former part of our work. Formerly there were three officers known in these churches; pastors, ruling elders, and deacons. The intermediate class is now discontinued. The constitution of these churches, so far as there is any, is derived from ancient congregational writers on this subject, from the Cambridge platform of 1648, and the collateral discussions, from the Saybrook platform, and from general usage.* The strictly congregational form of church constitution and government in this body, has undergone some singular modifications, by the connexion, or rather the identification, in the origin and early proceedings of the colonies, of the church with the state. Migrating as a church, the settlers, not perhaps unnaturally, though clearly both unjustly and unwisely, conducted civil matters in the same capa-

city, and would allow none but church members to be elected to any office, or to possess the entire privileges of citizenship. In order to provide more completely for public worship, there was effected a division of the country and of the larger towns into parishes, a place of worship belonging to some Congregational Society being often considered as the parish church, and the residents in the parish having a joint right with the members of the church in the election of the minister. These things are obviously incongruous with the great principles of the congregational system, and must have proceeded from an oversight of them. They have produced the results which might have been expected. By a recent legal decision, in a case in which the parish and the church could not agree in their choice, the church has been merged in the parish, its distinct rights of property taken away, and even its separate existence denied. Loud, and, as we think, just complaint, is made by the Congregationalists against this decision, and we hope it will be cancelled; but should it be established and acted upon as law, the whole body may tremble for their very sanctuaries, and will have to learn, by costly and bitter experience, the evil of departing from their principles.† There are about 1,000 Congregational ministers, 1,270 churches, and 140,000 communicants.

The Baptist churches in the United States are formed upon the same theological model as the Congregational, and differ only in baptizing by immersion on a profession of faith. The Calvinistic Baptists formed their first church at Providence, Rhode Island, in 1639, and are now found in all parts of the union. They are a highly numerous and influential body, having 224 associations, 4,384 churches, 2,914 ministers, and 304,000 communicants. This is far, however, from being the whole body of American Baptists; there are others of "one faith and one baptism," appearing under subordinate distinctions: such are

1. The Seventh-day Baptists. The first Sabbatarian church in America was formed in Newport, Rhode Island, in 1671, and they are confined principally to that state. A few years since they numbered about 1,000 communicants. In the United States there are now about 2,000 members, united together in an annual conference.
2. Emancipators, consisting of a number of ministers and churches in Kentucky, who, in 1805, took a decided stand against slavery, in principle and practice: their number is constantly increasing.
3. Free-communion Baptists, a name given

* For an account of the Cambridge and Saybrook platforms, see vol. i.

† Spirit of the Pilgrims, vol. i. p. 114. It appears from this ar-

ticle, that some places of worship belonging to other denominations are likewise "connected with parishes."

to about thirty ministers and churches, who reside west of Albany, in the state of New York. The preceding are all of them Calvinistic. 4. Free-will Baptists: the number of ministers probably amounts to 300; churches, 400; communicants, 16,000. 5. Tinkers, or Dunkers, who have acquired this name from the manner in which they perform the rite of baptism, the word Tunker being a corruption of tumbler. They first appeared in America in 1719: they hold the doctrine of universal salvation, with some peculiar qualifications. They have, probably, forty or fifty churches, principally in the western states, and have great singularities. 6. Mennonites, of whom there were, in 1824, about 200 churches. 7. Six-principle Baptists, so called, from their belief that the custom of the imposition of hands, recognised in Heb. vi. 1, 2, is still binding as a prerequisite to church communion. As these two verses contain six distinct propositions, these persons have acquired the name of Six-principle Baptists, to distinguish them from others, sometimes called Five-principle. They reside mostly in Rhode Island and New York, and, in 1828, consisted of about twenty churches, and from 1500 to 1800 members.

The Congregationalists and Baptists already mentioned require to be further designated as *orthodox*, in order to distinguish them from some of a similar constitution, but of a different creed. Of this kind is a Baptist community calling themselves Christians, in defence of the name they have assumed quoting Acts xi. 26, xxvi. 28, and 1 Peter iv. 16, and regarding all others as the invention of men. The first society of this kind was formed in Portsmouth, New Hampshire, in 1803; they have spread extensively in all parts of the United States; they are anti-calvinistic and anti-trinitarian, and have not far from 1,000 congregations. A portion of the congregational churches, likewise, is now characterized by what may be designated English Unitarianism. The origin of this form of belief in the states is not to be traced to emigration, but to the decay of vital piety among the Congregationalists of New England, which is stated to have occurred about seventy years since. Under the cover of indifference, Unitarianism but too effectually insinuated itself among the members and into the pulpits of that body, with no small measure, as is alleged, of secrecy and artifice; some concealing their sentiments because they were unpopular, others because they felt indifferent about them; and others, more reflecting and philosophical, because they conceived that their extension would be most effectually promoted at that particular time by reserve and caution. The first Unitarian congregation

formed in America was established in the king's chapel soon after the revolution, a case in which an open change was facilitated by the chapel becoming private property. As Unitarian sentiments became more general, they were gradually avowed with less reserve: yet the pulpits of many ministers who were supposed to have imbibed them gave no evidence of the fact, except by the systematic omission of distinct statements on discriminating points of doctrine. This at length brought upon them the charge of insincerity from their more orthodox brethren. The imputation was repelled with warmth, and the public were left in great doubt as to the precise sentiments of many of their pastors. Dr. Morse, the most prominent of those who publicly manifested their regret at the supposed defection of their brethren from the common faith, was accused of misrepresentation; and the most candid felt it almost impossible to arrive at the real state of things. At this time Dr. Morse happened to meet with Mr. Belsham's *Life of Lindsay*, in which he found his own representations borne out by letters and documents transmitted from Boston by the Unitarians themselves: these he put together in the form of a pamphlet, under the title of "*American Unitarianism; or a brief History of the Progress and Present State of the Unitarian Churches in America, compiled from Documents and Information communicated by the Rev. James Freeman, D. D. and William Wells, jun., Esq., of Boston, and from other Unitarian gentlemen in this country. By the Rev. T. Belsham, Essex-street, London. Extracted, &c.*" This pamphlet was eagerly read, and produced a great sensation. It disclosed the actual state of things, brought the question to issue, and ranged in opposite ranks those advocates of conflicting sentiments who had hitherto been confusedly intermingled.* The Unitarian party were not compelled to avow themselves, and to assume a distinct form in the United States, without loud complaints of illiberality against the orthodox Congregationalists; but, as it appears to us that this measure was right and imperative in its principle, so it is acknowledged on all hands to have been powerful in its influence, the orthodox churches having much increased since the commencement of this controversy, and Unitarianism being at a stand. The number of churches belonging to the Unitarians is not definitely known. Six or eight are found in Maine; four or five in New Hampshire; one in Vermont; one hundred and thirty or forty in Massachusetts; two in New York city; and a few in other places, south and west. It thus

* Letters from North America, by Adam Hodgson, vol. ii. p. 237.

appears that they are by no means a large body, and that they are almost entirely confined to New England, their head-quarters being in Boston, where they have possession of seven or eight churches, and where, at one period, only one or two were filled by evangelical ministers. Striking and surprising as it may appear, that such a system should have had its birth in the part of the United States most eminent for knowledge and religion, and that it should have enthroned itself in the very centre of orthodox Congregationalism, (for such Boston has always been,) gaining possession of its pulpits, its revenues, and its oldest, best endowed, and most influential university,* we conceive that there is nothing in these facts out of keeping, either with the character of Unitarianism, or the nature of man. The history of Unitarianism in our own country demonstrates it to be a system, delighting to insinuate itself into places it did not build, especially when attracted by funds which it is worth while to divert from their just appropriation; and proves equally, that nothing is so favourable to its progress as a religious state compounded of formality and indifference. Just so it has been in New England. The case of the Congregationalists there is but a repetition of that of the Presbyterians among ourselves: they stand, as a body, partly orthodox and partly Unitarian; and the strife on the part of the former will be, to induce, as vacancies may arise, the election of orthodox ministers. In this respect, if they could act as churches alone, their work would be much more easy, and their efforts more successful: it is the combination of parishes with churches which has given Unitarians their chief advantage, and creates for the orthodox their chief difficulty.† It is not the Congregational system, therefore, but a departure from it, which has suffered Unitarianism to enter; and in exact proportion to the degree in which its consistent operation can be restored, will be the prospect of expelling the intruder.

The first Methodist society in the United States was formed in the city of New York, in 1776, by some emigrants from Ireland. During the war of the revolution, all the preachers, except Mr. Asbury, returned to their native land. In 1784, Dr. Thomas Coke went to America, with powers to constitute the Methodist societies into a church: before this the

preachers were considered only as laymen, and did not administer the ordinances. Dr. Coke ordained Mr. Asbury a bishop, and thus gave to the whole Methodist body an episcopal character, which it has ever since retained. There is something singular in the contrast which is thus created between the Methodists of America and those of Britain; and we feel inclined to ask whence it arose. How is it that bishops were not ordained on both sides of the Atlantic? Was it originally intended, and frustrated on this side of the water by feelings relating to the proud episcopacy of the national church, which had no existence in America, at least after the establishment of its independence? The clergy of the Methodist Episcopal church consist of bishops, presiding elders, elders, deacons, and an unordained order of licensed preachers. The ministry is divided into itinerant and local: the former are constantly engaged in preaching and pastoral labour under the direction of the bishops and conferences; the latter perform these offices only as opportunity offers. The highest authority of the Methodist Episcopal church is the general conference, which meets once in four years, and consists of delegates from the annual conferences, in the ratio of one delegate for every seven itinerant preachers. The annual conferences are seventeen in number, dividing the whole territory of the United States: these conferences consist of all the travelling preachers in the connexion. Their numbers, in 1829, were 437,000, with 1639 travelling preachers.

The Quakers, or Friends, are found principally in Pennsylvania.‡ Within a few years past there has been a serious schism among them: a part professing the doctrines of Unitarianism, and called Hicksites, from their leader, Elias Hicks; the other portion adhering to orthodox sentiments. It having been made a question which of them ought to be considered as seceding from the doctrines of the original sect, the yearly meeting of Friends in London, May 20, 1829, sent forth an epistle, containing a statement of their belief; from which it appears, that they fully believe in the inspiration of the Scriptures, the supreme divinity of our Lord Jesus Christ, atonement by his sufferings and death, &c. The Hicksites, therefore, though not the minority, are the seceders. Of 150,000 members of this society, 56,026 are Hicksites,

church, but that all the property of the church should likewise be at the disposal of the parish, equally irrespectively of the will of that body. Enormous injustice, truly, and flagrant law! but a fit employment for Unitarian artifice, and a fit recompense for Congregational inconsistency.—*Spirit of the Pilgrims*, vol. i.

‡ The editors of the *Quarterly Journal of the American Education Society* tell us that the Quakers "agree with the Baptists in denying the validity of infant baptism."—Vol. ii. p. 187. Query: Do they allow the validity of adult baptism?

* Harvard University; now opposed by a flourishing institution at Andover.

† It is this controversy which has given rise to the legal appeal and decision to which we have referred in our account of the Congregational body. At a place called Dedham, the church having elected an orthodox minister, the parish elected a Unitarian; to which the church not submitting, the parish carried the matter before the supreme court, and the judge determined, not only that the election of the parish should stand against that of the

and 28,904 are orthodox; the others are not known.—The Dutch reformed church was the established church in the state of New York until it was surrendered to the English. The church was dependent for the ordination of its ministers, &c., on the classis of Amsterdam, in Holland, till 1757, when the first classis was formed in America. Its government is committed to consistories, classes, and synods.—Some members of the German reformed church were among the early settlers in Pennsylvania: they are descended from the reformed or Calvinistic church in Germany, and remained in a scattered state till 1746, when the Rev. Michael Schlatter, who was sent from Europe for the purpose, collected them together. They are found principally in Pennsylvania; but there are a few in Maryland, Virginia, Ohio, and other states. The following may be given as a general estimate of the condition of this synod, including that of Ohio:—classes, eight; ordained ministers, one hundred and twenty; congregations, five hundred.—Some persons of the evangelical Lutheran church settled in Pennsylvania and the adjoining states on their arrival in America, and were for a considerable time supplied with ministers from Germany, some of whom were eminent men: they are now found in Pennsylvania, New York, North Carolina, Maryland, and other states. The Augsburg Confession, consisting of twenty-one articles, is the acknowledged standard of faith for the Lutherans. Among the American Lutherans are three judicatories:—1. The vestry of the congregation. 2. The district conference. 3. The general synod, from which there is no appeal. The general synod contained, in 1828, about 200 ministers, and 800 congregations.—The principal settlements of the United Brethren are in Pennsylvania and North Carolina; their congregations, in 1828, were twenty-three; communicants, 2,000; members, 6,000.—In the United States, there are probably about 300 societies, and 150 preachers of the Universalist persuasion: a general convention is annually holden, in which the several societies in New England, and some from other states, are represented.—The Swedenborgians are organized into a general convention, which meets annually: the eleventh meeting was held in Boston, in August, 1829; it consists of pastors, or teachers, and lay delegates.—The population of the Shakers, whose worship consists in religious dancing, was, in 1828, 5,400, in sixteen societies, and with forty-five preachers.

Our readers cannot fail to have observed, that, in the preceding account of the religious bodies existing in the United States, we have made no mention of a

national church, or a state religion. There is, in truth, no such thing in the republic. Religion is scrupulously dissevered from the state, and as much from its patronage as from its control. The general government is prohibited by a fundamental article of the union from making any laws relating to religion, a right which the separate states have reserved to themselves; and they have determined, we believe unanimously, not to use it. The states, indeed, allot portions of land in new settlements for the support of schools or divine worship, but they leave the appropriation of the grant to the vote of the inhabitants, without preference being shown by the legislature to any sect. If any more religious legislation than this exists, it is only in the laws by which some of the states prescribe qualifications for office; but these are, we believe, universally a dead letter. We do not consider it as an exception to this rule, that acting ministers of the gospel are, by law, in some states, not eligible to the legislature, or to the office of governor: where no such laws exists, the principle, we are informed, is equally held and acted upon, that the union of civil and religious duties in the same person is inexpedient,—a point on which Mr. Cooper states “the opinions of the whole nation” are agreed. The opinion of the Americans in this respect is the more worthy of regard, because it is not the offspring of theory, but the result of experience. In many cases, and in some almost inevitably, the early magistrates of the colonies were ministers. Here, therefore, the utility of a clerical magistracy has been put to a practical test, and the decision of experimental wisdom is against it. Truly happy should we be to see a similar division between civil and sacred duties among ourselves.

We were saying, however, that, in the United States, religion is not established by law: so far as the government is concerned, every man is left entirely free to be of any religion or none, without any forfeiture of any civil right; and religious people are permitted to propagate every man his system, to whatever extent they please, alike without patronage and without resistance. This feature in the religious aspect of the republic has been regarded with considerable interest, and has become the subject of much discussion. Those who yield themselves to the imagination that a nation without a state religion is a nation of atheists, “a nation without a God,” have naturally deemed it a horrible enormity; those who conceive religion to be the only foundation of civil government, have not less naturally apprehended from it the irruption of anarchy; while those who identify the existence and spread of religion with the

apparatus and wealth of an establishment, have, with equal reason, trembled for the ark of God. There are others, on the contrary, and we place ourselves in this class, who deem the existing state of things in the republic right in its principle, and rejoice to believe, that it has been, and will be, beneficial in its results.

It should be recollected in the outset of this discussion, that the separation of religion from the state in the North American republic has not arisen from the original structure of the colonies, or from the principles or designs of the first settlers. As the colonists went out for the most part as religious bodies, so they were almost universally impregnated with a passion for making religion the basis of the state, or of putting the state under the government of religion,—the reigning passion of the age, from which even persecution had not purified them.* Hence, almost everywhere, one of the first proceedings was to establish religion by a fundamental law; and thus Romanism was established in Maryland, Episcopacy in Virginia, and, with grievous inconsistency, Congregationalism in New England. If in these regions religion is not now established by law, it is because establishments were found not to be useful, and for no other reason. Here is no mere theory brought forward and put into action, but, on the contrary, the exclusive result of experience. It is, moreover, not the experience of states in which an unestablished religion was instituted from the commencement, but of states in which establishments were first tried, and in which they were loved, and clung to with almost infinite tenacity. They were abandoned gradually, only as the necessity of circumstances and the light of experience dictated, and only as it was demonstrated that they did more harm than good. Here, therefore, we have the system of ecclesiastical establishments put to the most critical and satisfactory test, for such that of experience confessedly is. There is proverbially nothing crude, nothing rash, nothing delusive, in the lessons of this teacher, who is withal so effectual, that she is said to teach fools, at least if they will ever learn. To this it may be added, that no trial of the system of state religions can be more advantageous for the advocates of establishments than that to which it has been subjected in the United States; and though it is far less favourable for the principles of Congregationalism than a fair trial of their value might demand, yet we are content. It is so much the more satisfactory if the result be on our side.

* Ample proofs of this may be found in the first volume of this work.

The practice of connecting the more ample or more restricted enjoyment of social privileges with a particular religious profession, which some of the colonies at first rigorously enforced, was soon found incompatible with their secular welfare. Persons aggrieved in this method could so easily remove themselves, either into another territory, or into the unsettled wilderness, that such a policy had for the most part no other effect than that of banishing valuable residents, and this at a time when it was of the utmost importance to multiply them. To the necessity of encouraging population we are indebted for the first instance of a government in this respect entirely equal, that of Maryland, into which, although it was colonized by Roman Catholics, and although Romanism was made the religion of the state, persons of all religious persuasions were welcomed upon equal terms as to civil rights, while bigotry was driving Presbyterians from the south, and Episcopalians from the north, to cultivate the lands, to augment the resources, and to reward the liberality, of a wiser state. In other instances, the near equality between the parties inflicting and those suffering the grievances contributed to the promptness of its cure. During their infancy, the colonies received such numerous accessions of persons not of the religious persuasion of the first settlers, and these often became of such special value and indispensable importance to the colonies themselves, that when they complained, their voice was necessarily heard. The reigning church became merged in the general population; and the equalization of civil rights became too general and imperative a demand to be refused. Its refusal, had it been possible, would have been not merely folly, but suicide.

The interference of the state with religion was found by no means conducive to the prosperity of religion. Those who settled in the transatlantic wilderness not unnaturally partook of the boldness and freedom of the wilderness itself; and religionists of the same sect assumed no inconsiderable diversities. This was the case at least in New England, where, in consequence of it, an attempt was made to introduce a uniformity of worship, by a meeting of delegates under the sanction of the government. From this body issued the ecclesiastical constitution called the Saybrook Platform. It was approved by the existing legislature; but what then? It caused great discontent among the people, and it was not adopted in general practice. Resolved to try their hands again at this hopeless work, another meeting was held at Cambridge, and a second "platform," or code of ecclesiastical laws, was promulgated. The

result is, that the churches which these legislative enactments were to regulate have, to the present day, no uniform constitution at all; but each has adopted which of the laws it pleased, and the others remain a dead letter. It was found impracticable to enforce them, without inflicting evils far more than commensurate with the benefit; and experience thus taught these meddling legislators and divines that uniformity of worship, if it be any benefit at all, which may well be doubted, is too dearly purchased by animosity and oppression.

Equally adverse to the interests of true godliness has been found the secular endowment and nomination of the ministers of religion. In no section of the republic was this system more deeply rooted, or more fondly clung to, than in Virginia, where Episcopacy had been established as the state religion from the first. After it had been abandoned every where else, it was acted upon here, conjoined with a legal prohibition of a different worship. According to the wisdom of some persons in the old world, Virginia, under this treatment, ought to have been a religious paradise: unhappily, however, it was a religious desert, the ecclesiastical revenues of which were absorbed by a tribe of irreligious clergymen, and the people abandoned to neglect and impiety, while neighbouring states were enjoying the benefits of a disinterested and devoted ministry. The consequence was, that the common sense of the population dictated a petition to the state for the abolition of the religious establishment, and the legislature had wisdom enough to comply with it.

Sound wisdom and great liberality were long thought to be embodied in that act of some American legislatures, by which all persons were compelled to pay a rate proportioned to their property in support of religion generally, but were allowed to select the denomination to which it should be applied. Even this, it seems, does more harm than good; and the last fragment of that system of secular interference or support on behalf of religion, which has been contemplated among ourselves with such profound veneration, and which has so long been identified in imagination with the existence of religion itself, is probably doomed speedily to follow the fate of the structure of which it formed a part.

What then is the fact? Has religion perished in the ruins of its secular supports? and have the rash hands, so unkindly laid on religious platforms, fallen with a kindred violence on piety herself, whose sa-

cred person they were intended to enthrone? It is an incontestable fact that nothing like this has occurred. Not only have these successive, and, in the eyes of some persons, these alarming changes, been made by those who wished religion, not harm, but good; but religion has actually survived this perilous treatment, and now appears in a state of no ordinary vigour and advancement. Nowhere has vital christianity suffered any injury by it: although she has had to grapple with the wickedness of man's heart in successive generations, and to sustain the assault where circumstances have given an extraordinary and almost unprecedented license and power to evil propensities: and although, while her dominion was yet young, and might have been supposed to be feeble, she had to contend with the mighty champions of infidelity, whose writings were poured like a flood into the bosom of the republic from revolutionary France, with a boastful confidence of success, she has nobly maintained her ground. Where religion ever flourished, it flourishes still, except where the baneful influence of religious establishments, or of practices partaking of the nature and principles of establishments, have enfeebled her energy. To such a cause exclusively, we conceive, must be referred the generation of Unitarianism in Massachusetts, together with the state of apathy by which it was preceded; results which the parochial division and the religious tax undoubtedly facilitated, and which the removal of these vaunted "aids" to piety will probably not only check, but ultimately leave to perish.

To say that religion has maintained its ground in the United States, however, is far too little. It has been continually and greatly on the increase. Voluntary zeal, without the lure of secular emolument, has extended the preaching of the gospel through a very large portion of that immense territory; and every where with a measure of success proportionate to the activity employed. Let our readers but refer to the hundreds of thousands of communicants comprised in the religious bodies of unexceptionable character already described, recollecting that they are gathered from all parts of the union; and, making a reasonable allowance for children and others, among whom, as usual, these persons of piety may be scattered, let them say whether these fruits of a few years' labour are not tolerably creditable to a religious system without that indispensable help, an establishment.* It may add to the distinctness of

* "Whatever may be the actual state of religion in this country, I am quite satisfied that it is on the advance. There may be many local exceptions, but my inquiries and observations in every part

of my route, have led me to a confident conclusion as to the general fact."—*Hodgson*.

"No one of reflection and candour can fail to be convinced, that

the fact, if we mention the annual increase of some of the principal denominations:—the Presbyterian official reports for 1831 exhibit a clear increase of nearly 20,000 communicants during the year; the Congregationalists have had an equal number of accessions; and the Baptist denomination, as far as can be ascertained, experienced an increase of about 10,000 members during the same period.

But, perhaps, the religion thus disseminated is of a spurious and unsatisfactory kind; perhaps, without the pressure of ecclesiastical authority in matters of faith, religious excitement may have run wild, and generated forms of superstition and error, fantastic beyond all former example. Open as the bosom of the states has been to the reception and unshackled utterance of all diversities of opinion from all quarters of the world, it could have been no matter of surprise if this had been the case; but while some of the numerous sects are certainly singular enough, and some may, perhaps, be peculiar to the republic, its condition in this respect presents nothing at all extraordinary.—It is well known that sects do not exist only in America. Their number on that side of the Atlantic does not appear to exceed those which exist in our own country, and they are far fewer than those which have been generated in the bosom of the Romish church, and cloaked in the mantle of her infallibility. For nearly the whole of its diversities, the union is indebted to other countries; and if in any case a vagary of religious enthusiasm has shown itself in America to which Europe is a stranger, how many forms of fanaticism exist on this side of the Atlantic which have taken no root on the other! Besides, sects of great peculiarity are invariably small and insignificant. The great masses in America, as in Europe, and more especially as in England, are the Roman Catholics, Episcopalians, Congregationalists or Independents, Baptists, Methodists, Unitarians, &c. Freedom of thought and discussion, though it has been highly advantageous to the science of theology, has given birth to no new forms of religious belief; while the pillars of the moral and religious system stand but the more firmly amidst the deep convictions of the mind, for the shrewd and fearless investigation to which they have been subjected; and truth and error are but repeating the same phrases with which the old world has for ages been familiar. With some exceptions, of which it is impossible to speak without mingled censure and regret, there is

truth and righteousness do, to a very important extent, prevail: and that those principles are in a state of increasing progress, and develop much."—*Duncan*.

"I found more places of worship in the large towns of America than in similar towns in Britain; and much genuine piety among

no departure from the sobriety and sound judgment by which the ministrations of religion, and the conduct of its professors, should unquestionably be characterized. To these observations it may be added, we believe with indubitable truth, that, in some places, if not in all, personal piety is more decided and vigorous than among ourselves; we mean, that persons who are religious are more manifestly so, and that their religion imparts more of its character to their converse and general deportment; so that among professors there is a tone and atmosphere of piety of a more elevated and decided kind. In this connexion we ought to notice, likewise, those remarkable periods which are now so familiarly known on both sides of the Atlantic as revivals of religion, during which conversions of ungodly men are multiplied to an extent, and with a rapidity, in modern days altogether unparalleled.

In reference to the influence of religious establishments, it is not a little remarkable how the very systems which have been accustomed to them, and have for the most part been identified with them elsewhere, thrive in America without them. Both the Roman Catholics and the English Episcopalians are in a state of vigorous action and prosperity, which, upon the supposition of secular support being of any great consequence, is altogether inexplicable. While they were established they were feeble; when their secular props were broken from under them they began to prosper. They are now associations of an exclusively voluntary character, and have neither impulses nor resources but such as individual sentiment may afford; and yet they are marching through the length and breadth of the American union, diffusing and establishing an influence which the secular arm could never have acquired for them. We entertain a full conviction, that now these bodies have breathed the air of freedom, and felt its inspiring energy, neither of them would wish to receive the gaudy trappings and oppressive patronage of a state establishment, and that such a step, if it were practicable, would speedily reduce them to a state of torpor and decay.

We have looked with some care at the topics which have been adduced on the contrary side of the argument to that which we have taken; and we may be expected, perhaps, to take some notice of them in passing. Some writers speak of the value of "national religion as distinguished from personal religion;" and, from certain forms of phraseology in

the Presbyterians, the Congregationalists, the evangelical Episcopalians, the Methodists, and the Baptists; and, as far as my journeying extended, I observed a cheering exhibition of Christian progress; as in England, all denominations of real Christians are increasing, and all are growing better."—*Ward, of Serampore*.

state documents, augur the stability or the ruin of empires. We wish these gentlemen would be at the pains to acquire a distinct notion of religion itself, and then they would see in a moment that it cannot be otherwise than personal, and that their notion of "national religion" is one of the merest fictions ever imposed upon the human mind. A nation can in no other sense be religious or irreligious, than as a greater or less proportion of the individuals who compose it are so. As for the whim of prophesying that the American union will some time be violated, because religious phrases were not incorporated in the constituent legislative act, it is purely ridiculous. Writers who contend that religion is the only basis of government, forget how many governments have existed and prospered without being founded upon any religion but a false one, the efficacy of which we suppose the advocates for the excellency of the true will not very strenuously maintain. To us it is obvious, that, while religion undoubtedly tends to promote the welfare of a nation, by causing the duties of social and public life to be better understood and fulfilled, the principles on which the existence and prosperity of nations are founded are not those of religion, but of mutual interest; principles which it does not require christianity either to understand or to follow.

To quote the French revolution as an example of a throne destroyed by the overthrow of religion, is quite in character for the advocates of priestcraft and of despotism; but we marvel at such language being held by Americans. The feelings of the people, it is true, were wrought to desperation by a set of designing infidels: but they were wrought upon by an appeal to the oppression which, alike from the court and the church, they had endured; and it was to avenge these social wrongs that they lifted themselves up against the powers which had inflicted them. They imbibed the poison of infidelity; but to say that they destroyed religion is absurd, for in all that their fury overwhelmed there was no religion to destroy. They suffered a period of anarchy and bloodshed, not because they had cast off religion, for none had previously existed; but because they yielded themselves to the frenzy of a selfish ambition. If they have subsequently been more tranquil, religion has had nothing to do with it; if they are yet restless, it is not for want of religion, but of a due regard to the principles of mutual interest. Without these, the government of an intelligent community never can be stable, as with them it can be in no considerable peril; and if the American union observes them, without making any pretension to the

prophetic gift, history and common-sense assure us that long will be her prosperity.

It has been alleged, as an evil resulting from the absence of a state or national religion, that it allows persons to be of no religion at all; a permission of which it appears that no inconsiderable number on the western side of the Atlantic have availed themselves. Now, without questioning in the first instance the power of the state in this respect, we may ask, why the right of being of no religion should be denied by any government to its subjects? Is not this a question lying exclusively between man and his Maker, and to be settled on moral considerations, entirely apart from authoritative human interference? But suppose the state sets out on the quixotic errand of making christians of its subjects by wholesale, what can it do? Nothing but impose a ceremony and a name, while all the principles of character are left unchanged. If, therefore, the United States were to pass a law that all persons who did not choose to identify themselves with any minor religious sect, should be considered as belonging to some one henceforth to be made national, what would result, but that the present avowedly irreligious population would be compelled to assume a disguise and play the hypocrite, without having one particle more of religion than they had before? We ask any man of common sense to say whether there would be any advantage in this; and whether it is not better that persons who will be irreligious, as vast numbers will, and perhaps equal numbers whether there be a state religion or not, should appear to be so, rather than be screened alike from knowledge, rebuke, and conviction, by an inappropriate name? It is easily intelligible, that the absence of a national religion in the republic should be connected with the absence of that habit of religious forms which, in other countries, give a semblance of religion to society at large, and, by allowing irreligious character to show itself with greater distinctness and freedom, should tend to the diminution and ultimate annihilation of that large class of persons, who avail themselves of decent forms to conceal sceptical opinions, and an irreligious or perhaps a profligate life. And this we conceive to be the whole of the case in the North American republic. We see no proof that the population is more wicked there than in countries where a national religion, as it is called, is maintained; but there being no bounty put upon the observance of religious forms, and little penalty in public opinion attached to the neglect of them, the wicked are, perhaps somewhat more openly and more freely wicked; and instead of extenuating their wickedness

by saying, as here, that they belong to the church, they avow, what is equally the fact in both cases, that they are of no religion at all. So far from esteeming this an evil, we consider it a benefit. All experience shows that the method of disguising wicked men under the name of christians, has done little towards the repression of vice, while it has done much to dishonour the profession, to obstruct the progress, and to paralyze the power of christianity. In the United States every man may be judged of "by his fruits;" and the ungodly part of the population, instead of being claimed in their sins as good members of the national church, lie open, as acknowledged sinners, to the instruction, reproof, and persuasion, of all who may take pity on their souls. This, if we mistake not, ranks high among the very reasons why religion spreads more rapidly in that country than in any other in the world. Before we leave this topic, we may add, that we scarcely know how to suppress a smile when we find a respectable writer in America,* eagerly quoted by high churchmen in England, speaking of the class of persons above referred to, those of "no religion," with horror, as "unbaptized infidels," and that unbaptized infidels are "the most atrocious and remorseless banditti that infest and desolate human society." That the vast territory of the republic is infested with "atrocious banditti" to a lamentable extent may possibly be true enough, as well as that it contains no small number of "infidels;" but Mr. Bristed's doctrine is, not merely that the infidels and the robbers are actually "unbaptized," but that it is the want of baptism which has caused the mischief! If it will be any comfort to this gentleman, we can assure him that his wonder-working rite has done very little in the Old World to prevent either infidelity or murder; and if he will take the pains to make the inquiry, we think he will find fewer of the American banditti and infidels "unbaptized" than he may have been inclined to suppose.

Another evil alleged to arise from the want of a national religious establishment in the United States, is the destitute condition of the new settlements. Now it is an unquestionable fact, that the border settlements in the western country are, to a very lamentable extent, characterized by prevalent irreligion, and unprovided with means of religious instruction. In many cases, a remedy for these evils is not desired; and when it is, the combined and only adequate exertion of the scattered population for this end, is often obstructed by sectarian attachments.

We do not wonder that the idea of government dividing such districts into parishes, and appointing a minister to each, with a salary from the public purse, should occur to the friends of establishments in such a case as this: it accords with their habits of thinking, and it is perhaps plausible in itself; but it is only plausible. The nomination of religious instructors by the state has never been found to secure a faithful and devoted ministry; and to try the experiment again on the Ohio or the Mississippi, would only be to renew disappointments which have already been sufficiently plentiful, both in the Old World and the New. Besides, in this case, one of several coexistent and rival sects must be adopted and patronized by the state, a step which has always been found to inflame animosity rather than to allay it, and which would soon add to the evils of the border settlements, already sufficiently great, the worse mischief of party feuds. It is remarkable, indeed, that one of the most strenuous advocates of state support for religion,† while loudly calling for a parochial provision in the new country, acknowledges its inutility in the old. Speaking of Massachusetts, where the desired method has had the longest and the fairest trial, he says, "Even here, we are beginning to feel the evils arising from division, and to feel them severely:—your parishes are crumbling into ruins,—party is arrayed against party,—to settle a minister becomes impracticable." Why, therefore, should an apparatus be set up elsewhere, which, in the most favourable circumstances, has produced such unsatisfactory results?

While we are convinced, however, that no ultimate or permanent good could arise to these destitute regions from the interference of the state, we must add that they have a strong and imperative claim upon the friends of religion in the more favoured parts of the union. This is the source from whence their help should be derived. They present an appropriate sphere for operations of a truly missionary character, and can be effectually benefitted only by missionary zeal. Considering the rapid population and the growing influence of the western states, no religious object should be deemed by American christians of equal importance with the diffusion of vital religion throughout their whole extent. There can be no doubt of their competency to the task; and if it is painful to see how much in past years it has been overlooked, it is matter of joy to know that it has recently been entered upon in a spirit of great promise. Besides the labours of the American Home

* Mr. Bristed, "America and her Resources," p. 394.

† Dr. Jarvis, as quoted by Mr. Hodgson, "Letters from North America," vol. ii. p. 224.

Missionary Society, which are not inconsiderable, a vigorous effort of Sunday-school instruction has been made by several thousand teachers, who have pledged themselves to go through the whole of the great central valley, and are still engaged in the accomplishment of their purpose. Those who have already encountered the labour of sowing the seed of divine truth in this hitherto barren region, have found it far from unproductive; and there is every reason to believe, that, under the hand of assiduous cultivation, it will ere long be fruitful as the garden of the Lord.*

To bring this long, but we hope not unimportant or useless discussion, to a close, we may remark, that, if the absence of a national establishment of religion be connected with no evil, it is an obvious and positive good. The advocates of such institutions, while they have contended that they yielded benefits for which it was worth while to bear them, have never maintained, we believe, that they were blessings in themselves. The heavy expense which they entail upon a country—the corrupting influence of church patronage—the anti-national bias of an endowed hierarchy—the inundation of interested and worldly ministers—and the heart-burnings inseparable from the elevation of one sect above its fellows—are evils which might be thought too great to be suffered for any price; but they are at all events too great to be endured for nothing.

To the absence of a religious establishment has been referred, and perhaps with some justice, the liberality of different sects towards each other, which exists to an eminent degree in the republic. The feature itself is at all events a very pleasing one, and must contribute very materially, both to the facility of individual labour, and the power of united exertion. “The different denominations in this country,” says Mr. Ward, “come together in delightful harmony, and co-operate without being obstructed by those impediments which exist in other countries. The Sunday-school Union, in New York, exhibits a noble specimen of the true christian feeling, and the Union flourishes accordingly.”

We may now turn to the consideration of a subject which we have already incidentally noticed,—we mean the Revivals of Religion by which some parts of the United States have been distinguished. Few things have struck the ear of the christian public in this country with more surprise and incredulity than the accounts which have of late more particularly

reached us, of wide-spreading religious excitements and conversions in a few weeks amounting to several hundreds, and in some cases, thousands. Not a few have asked, with the very best intention, What is to be thought of these things? Must not large allowances be made, either for glowing representations, or for enthusiastic feeling? We apprehend that no judicious person, on either side of the Atlantic, commits himself to the approbation of every thing which may be called a revival of religion, or may be attendant upon one. Some of them, it is admitted on all hands, have been enthusiastic to a great degree; while others have been eminently characterized by the exercise of sound judgment, the awakening of holy emotion, and the production of valuable fruits. For the former we make no apology; of the latter we shall endeavour to lay before our readers a brief but comprehensive view.

It appears we are not to consider a revival of religion as synonymous with a multitude of conversions. By an author who writes from his own observation, their peculiar feature is illustrated in the following manner:—“Imagine a sinner awakened, and led on to conversion by reflection; having, in the mean time, little or no intercourse with other minds on the subject of religion, but, associating principally, or exclusively, with his bible, and communing alone with his own heart and with God. Scarcely a second person is aware of the state and progress of his mind, except that, if he is concerned in the common intercourse of life, the more than usual gravity and seriousness of his demeanour will naturally be observed. There are, doubtless, a great many conversions of this sort, and they may be called, in distinction from another class, insulated conversions. Suppose an individual has been awakened by the admonitions of a sermon, or of some private intercourse with other minds, and is conducted by the Spirit of God to the stage of genuine conversion, but is virtually alone in this state and progress of his mind; there being no second person in his neighbourhood in a similar condition; this may also be called an insulated conversion, though not so absolutely so as the other case supposed: there was, indeed, a social influence which first awakened his attention, but no sympathy of other minds in a like condition, either to originate instrumentally, or to urge on his career. There is little reciprocal influence between such conversions and society. We may suppose, again, a community of greater or less extent, bound together

* We recommend it to the serious consideration of religious individuals or families who propose to emigrate, whether it is not their duty, by settling in some of the new states of the Mississippi

valley, to assist in the promotion of vital religion in a portion of the world, the importance and influence of which is increasing at a ratio of which it is difficult to form an adequate estimate.

by many common ties of a social character, through the channels of which sympathy on all subjects of common interest, especially those calculated to agitate the mind, is easy and quick. It may further be supposed, that the spirit of God arrests the attention of an unconverted individual of such a community, producing a very anxious solicitude for the salvation of his soul—so anxious that he cannot keep it a secret if he would. It is, moreover, supposed, that this community are generally instructed in the doctrine of repentance, as essential to peace with God,—and of regeneration, to salvation. It is the common public opinion—the popular belief, by an habitual speculative assent. Of course it is an easy and natural step to the conclusion, that it is quite reasonable, and even important, for every individual, at some period of his life, to devote himself, in special earnest, to his own preparation for eternity—that he is in danger of being overtaken in his sins by death. When, therefore, an individual of such a community is suddenly and powerfully seized with a concern for his soul's eternal welfare—so powerfully that he cannot conceal it—that his feelings break out in tears and in prayers—that he throws himself upon the compassion of christians as more fitted to guide his anxious mind, and to be his intercessors with God—and that, of necessity, the matter becomes a subject of some public notoriety—it very naturally produces a pause in the ordinary career of those with whom this individual is more intimately allied. And it may also be supposed, that the same Spirit which has smitten the individual with a conviction of his guilt, and a sense of his danger, employs that very event as an instrument of awakening his former associates to an equal degree of concern, so that they not only pause at his arrest, but are themselves arrested, finding that they too are involved in the same condemnation, and have need of the same pardoning mercy and sanctifying grace. And now a group of individuals are together, asking, with an affecting and overpowering earnestness—What must we do to be saved? And this increase of the number renders it still more a matter of public notoriety; and there is a general pause. Every individual of this group has his more intimate connexions with society as the first individual had with them; and for the same reasons, and we will suppose, by the same divine influence, the number of the anxious is soon multiplied, till a crowd of individuals are together asking and seeking the way of salvation; and soon a whole community are affected, in a greater or less degree. All sympathize. Christians are 'filled with faith and the Holy Ghost,' and with an uncommon spirit of prayer; they are excited to diligence and roused to activity. The minis-

ter or ministers of religion are greatly animated, and uncommonly furnished by the natural excitements of such a state of things. 'The house of God is thronged, and the assemblies deeply affected and impressively solemn. Every sermon, and every prayer, and every exhortation, seem to tell with amazing power on the congregated multitudes. Sinners are converted, and others awakened, and the work goes on with increasing power, extending through the community. Meetings are necessarily multiplied to meet the exigencies; ministers and christians have as much as they can do to attend to the anxious, to guide the inquiring, and to conduct the frequent public assemblies of the people. They visit from house to house, warning the careless, encouraging and confirming the trembling hope, rejoicing with those who rejoice, instructing, exhorting, and offering up prayer. And this is somewhat the manner of an American revival of religion. And the fruit of it is, that many sinners are hopefully born again, the church enlarged, believers improved in their christian character, the interests of religion obtain a wider and more solid foundation in the community, and the way is better prepared for another season of like refreshing influence from above.'*

American revivals, therefore, in part at least, owe their existence and peculiarities to sympathy. The supposition, however, that they wholly do so, and that they are nothing more than powerful sympathetic excitements, is by no means reconcilable with the nature of the results. "There is nothing in the social principle," as Mr. Colton justly remarks, "to account for a great and sudden movement of a whole community, upon a subject which, like that of the christian religion, has been before them from time immemorial, with all its sanctions and with all its motives—nothing in it, independent of the coming in of a special influence—an influence which does not lie in the letter of christianity. A community may be surprised by what is new—but every thing in the letter of christianity is old. A community may be greatly moved by what naturally and deeply affects their passions, when unexpectedly brought before them by the eloquence of the tongue, or under the affecting power of circumstances. All such excitements, however, can only be momentary. But that the histories, and doctrines, and truths of religion, in which the public mind had been thoroughly versed from the cradle, should suddenly be armed with an unwonted power, not only over the minds of individuals, but so as manifestly to affect a whole com-

* Rev. C. Colton on American Revivals of Religion, pp. 10—14.

munity, and operate a thorough change in the hearts and lives of many individuals of that community, is a fact which, so far as I know, it lies within the compass of no philosophy to account for, but that of the religion which is the instrument of the change, and which professes to solve the problem by a reference to the powers of the Holy Ghost. What reason is there that one community should feel more than another, or one person more than another;—their education being the same, and other things equal, which belong to the same relations and influences of society? And what reason, that the same communities and the same persons should feel more at one time than another, under the same system of means? Independently of the Spirit of God, there is a mystery in this; but with it, there is no mystery."

It has been customary to regard American revivals of religion as connected generally, if not uniformly, with scenes of enthusiastic extravagance; but it would appear that such an idea has been entertained with little truth. Without maintaining an entire absence of irregularities, which, indeed, it would have been, in the highest degree, unreasonable to expect, the author we have already quoted gives the following general statement:—"The ostensible phenomena of revivals of religion in the United States have exhibited themselves very much according to the characters of the communities affected, and of the individuals to whom, in the providence of God, have been committed the guidance and control of public feeling. In New England, the character of the communities has always been of a grave and sober cast, where thought takes lead of feeling; and the temperament of the ministry is more severe than ardent—more prone to stock the understanding than excite the passions. Hence the public excitements of revivals have never exposed the people or the ministers to extravagances. The most remarkable characteristic of such seasons is not noise but stillness—the reign of contemplative silence and solemn reflection. The world itself seems hushed, as if awed by eternity. The public assemblies are thronged, indeed, but the ordinary restiff listlessness of an unthinking crowd is settled into a wrapt attention of the soul, and into the silent, but not less expressive demonstrations of the deepest emotions. Public order is not less, but more exact. A violation of it would be the more shocking. There is no want of feeling, and no difficulty in controlling it. And I have yet to learn the occurrence of any notable disorders in all the revivals of New England that have ever come to my knowledge. They may have hap-

pened, but I never heard even of one. All is decency, and all quietness—not, however, the quietness of stupor, but of subdued feeling. A large portion of New England is literally educated to revivals. The present generation of ministers and churches has been born in them, and brought up in them, and is familiar with all their scenes. They understand the symptoms—they know what to do and how to do—and the people know how to behave. In the highest excitement of public feeling, it would be morally impossible to drive the people into disorder or extravagance. They have no such habit. Such is the fixedness of their character, that no power on earth could essentially discompose the public mind. But all this cannot be said of every portion of the population of our country. Farther west there is less of the stubbornness of a well-defined and fixed character, as the settlements are new, and society comparatively heterogeneous and unorganized. Farther south, the people are more ardent and more excitable. But the medium of those extremes is of a character qualified between the two—I mean that medium of society, which is found in the intermediate territories. And there are many, very many communities without, and some of them far without New England, in the states of New York, New Jersey, and Ohio, where revivals of religion are characterized with as much sobriety as in the land of the pilgrim fathers. Irregularities and extravagance are no more essential attributes of revivals, than are the physical conditions of the territory and climate. They are mere accidents, when they happen to occur, owing to the state of society, or to the want of a proper superintendence, or to the combined influence of both these causes. A proper superintendence may, at all times, and in any community, prevent them."

It is conceived by Mr. Colton, and doubtless by his American brethren generally, that there is in the revivals with which they have been favoured, something peculiar, not only to their own country, but to the last age of christianity.

We cannot here enter into the details by which he supports his opinion; but if the views of this writer be adopted, (and we confess that we are disposed to adopt them,) it becomes of some interest to inquire what the reasons may have been which, either in themselves have favoured the production of revivals in the United States, or may have rendered it good in the eyes of divine wisdom thus peculiarly to honour them. On these points, let us again hear Mr. Colton. "It is remarkable that revivals of religion, under

their American character, commenced in New England, and were, till quite recently, principally confined to that region. And their extension westward and southward, I believe, has generally been found in the track of New England emigrants, or springing up under the labours of New England ministers, until they are now beginning to be reported from every part of the land. The great bulk of revivals, however, are still found in the east and north. Such facts may be presumed to have a connexion with the original elements and peculiar frame of society, as also with the blessings of God in reward of the distinguished christian virtues of the founders of such institutions, and of the fidelity of successive generations in supporting them in their original spirit. It is a general and exact truth—that the pilgrim fathers of New England laid the foundations of their civil and social edifice, and of their religious institutions, in tears, and prayers, and in much faith. And the experiment of 200 years has proved that God has regarded those tears, and remembered those prayers, and plenteously rewarded those works of faith.*

Our author refers us likewise to the general aspect of society in the transatlantic republic. "It is generally understood, that the state of society in the United States is very near to a common level. And so far as the sympathies of the community are concerned, on any subject of great and common interest, it is agreeable to fact. Especially is it so in those regions where revivals of religion originated, and have principally flourished. It may be said of all the minor communities, of which the grand community is composed, that, in each of them, every body knows every body, and feels an interest in every body; so much so, that nothing of material interest transpires with a family, or scarcely with an individual, but that a pulse of sympathy beats through the whole body. Such being the state of society, and religion being generally acknowledged and esteemed the paramount interest of man, and, withal, the public conscience being preserved pure and susceptible, it is not very difficult to see, that the marked conversion of one or more individuals might become a subject of common and public interest. And admitting the scripture doctrine of the office and special

agency of the Holy Spirit in the work of conversion, the change might well be regarded with a high degree of respect and reverence. It has ever been considered as a great and decided change—a change which every one must undergo, in order to salvation. It has been habitually urged and pressed upon the conscience as a present duty. With a public mind so enlightened, and a conscience so susceptible, and a common sympathy so all-pervading, it can hardly appear incredible that the awakening of one sinner should be the means of awakening others, and the conversion of one the means of other conversions. And to this day there are no barriers of *caste* in the United States—no impaled, insulated conditions of society, of a character to limit the common circulation of good and healthful moral influences—or to prevent a reformation begun in one place, from reaching every other place." It is a striking indication of the extent to which sympathy is carried in religious concerns, that, among ministers of the same denomination, a custom of exchanging pulpits exists, to the amount of nearly one fourth of their services. It thus arises that the influence of even a single minister of peculiar energy becomes widely felt; and it is an honourable feature in the congregation over which he is fixed, that they can rejoice in this extension of his usefulness.*

To these causes may be added, we conceive, the character of the theological system, which, within the last century, has been advocated in New England, and has now obtained a general prevalence. The change accomplished within this period is thus luminously stated by Dr. Lyman Beecher: "Our Puritan fathers adhered to the doctrine of original sin, as consisting in the imputation of Adam's sin, and in a hereditary depravity; and this continued to be the received doctrine of the churches of New England, until after the time of Edwards. He adopted the views of the reformers on the subject of original sin, as consisting in the imputation of Adam's sin, and a depraved nature transmitted by descent. But, after him, this mode of stating the subject was gradually changed, until, long since, the prevailing doctrine in New England has been, that men are not guilty of Adam's sin, and that depravity is not of the sub-

* Though Unitarianism stands far removed from all connexion with revivals, its diffusion has been with great probability traced to this sympathetic practice. "The question has often been asked, what has led to that awful degeneracy of Boston with respect to evangelical truth, which the friends of the 'faith once delivered to the saints,' have so long observed and deplored? Various reasons have been assigned for this phenomenon, a phenomenon nearly, if not entirely unparalleled in ecclesiastical history: but I acknowledge none of these reasons have ever satisfied me. The licentiousness and derangements of the revolutionary war were known, and exerted an

influence in other places as well as in Boston. The literary character and inquiring spirit of the clergy have been quite as much distinguished in some other places as in that town. The same remark might be made with respect to several other considerations usually offered to assist in solving the difficulty. I have scarcely any remaining doubt, that a principal cause of the effect in question is to be sought in indiscriminate exchanges with all classes of heterodox ministers. There probably never was a place in which this system has been carried to such a length as in Boston."—*Spirit of the Pilgrims*, p. 143.

stance of the soul, nor an inherent or physical quality, but is wholly voluntary, and consists in the transgression of law, in such circumstances as constitutes accountability and desert of punishment. This change was not accomplished without discussion. It was resisted by those who chose to be denominated Old Calvinists, and advocated by those who were called Hopkinsians and New Divinity men, until, for many years, these views of original sin have been the predominant doctrine of the ministers and churches now denominated Evangelical. These, while they disclaim the language held by Calvin and Edwards on the subject of imputation, do, in accordance with the bible and the reformers, hold that there is a connexion of some kind between the sin of Adam and the universal, voluntary, and entire depravity of his posterity; so that it is in consequence of Adam's sin that all mankind do sin voluntarily, as early as they are capable of accountability and moral action. The pamphlets and treatises on this subject were written, and the subject settled," adds Dr. B. "chiefly before my recollection. But I have read them, and have searched the scriptures, and have, from the beginning, accommodated my phraseology to opinions which had been adopted as the result of an investigation which commenced more than seventy years ago, and has been settled more than fifty years; and which is now, with some variety of modification, received substantially, as I apprehend, by two thirds, if not by three fourths, of the evangelical divines in the United States."*

This change of theological system, (we speak with-

* Spirit of the Pilgrims, vol. i. p. 158. Dr. Beecher goes on to say, "Some of the most approved writers on this subject are, Hopkins, the younger Edwards, West, Smalley, Spring, Strong, Dwight; and in England, Andrew Fuller, one of the greatest and best of men. The following quotations from several of these writers will show the fact, and the nature of the change in the mode of stating the doctrine of original sin. 'It is not to be supposed that the offence of Adam is imputed to them, [his posterity,] to their condemnation, while in their own persons innocent; or that they are guilty of the sin of their first father antecedent to their own sinfulness. All this is asserted as to what the scriptures teach us, that, by a divine constitution, there is a certain connexion between the first sin of Adam, and the sinfulness of his posterity.'—Hopkins, vol. i. p. 319.

"The subject is thus stated by Dwight: '1. That by one man sin entered into the world. 2. That in consequence of this event, all men have sinned. 3. That death, as the consequence of sin, has passed upon all men.' And he says, 'It is clearly impossible that any being except a thinking, voluntary one, should be the subject of either virtue or sin.'

"Please to remember that your wicked nature is your own, in the most personal sense; for, though we are sinners by Adam; though there is an established connexion between the sin of Adam and the sin of his posterity; though all the children of men are, by nature, totally depraved, in consequence of Adam's sin; yet sin is a personal quality. And as your hearts and souls are your own, and not the hearts and souls of other men; as your thoughts and volitions are your own, and not the thoughts and volitions of others; so your sin and evil nature are your own, and not the sin

out committing ourselves to its entire approval,) must undoubtedly have exercised an extensive influence on the modes of conceiving other topics, besides those more immediately specified, and have powerfully modified the whole style of pulpit address. In the latter respect, the change is wholly in favour of a more efficient ministry. The notions that men are born to be punished for Adam's sin, that they are summoned to duties they are not able to perform, and are to be tormented with the loss of happiness they never had the opportunity of attaining, whatever may be their other merits, have a clear adaptation, on the principles of common sense, to frustrate all exhortations, and to lull men into an imperturbable slumber. The new Calvinism of New England, on the contrary, bears upon the conscience with a direct and immense pressure; and to this cause some of their writers have, we think with great reason, attributed the signal success of their ministry.

But it appears, that, beyond the general influence of a stimulant and awakening ministry, there are methods employed in the western world for the direct and specific purpose of producing revivals of religion. On this part of the subject, Mr. Colton's treatment of which is highly interesting and important, our limits will not allow us to enter into detail. The modes of proceeding which have been adopted are of great variety; but they are obviously pervaded by the general design of bringing known and familiar truth into a more direct and powerful bearing upon individual feeling. Hence the protracted services, in which preaching and other exercises are

and evil nature of another. David, in his penitential confession, evidently refers to the established connexion between the sin of Adam and his posterity; for, he says, with the note of attention, 'Behold, I was shapen in iniquity, and in sin did my mother conceive me.' But he does not confess the sin of Adam any more than the sin of Seth; nor will any other man who is the subject of a proper share of conviction; for sin is a personal quality, and can not be transferred from one to another, any more than the heart or soul of one man can be transferred to another."—*Spring's Disquisition, as quoted in Ely's Contrast*, p. 79.

"Adam's first offence was some way or other the occasion of the universal sinfulness of his future offspring. And the question now before us is, how his sin was the occasion of ours. 1. Adam did not make us sinners by causing us to commit his first offence. Nor can we more easily believe, 2. That he made his posterity sinners by transferring to them the guilt of his first transgression. The doctrine of imputation, therefore, gives us no ground to suppose that all mankind sinned in, and fell with, Adam, in his first transgression; or that the guilt of his first sin was, either by him, or by the Deity, transferred to his posterity. Nor can we suppose, 3. That Adam made men sinners by conveying to them a morally corrupt nature. There is no morally corrupt nature distinct from free, voluntary, sinful exercises."—*Emmans, as quoted in Ely's Contrast*, pp. 67, 69, 71.

"Men have lost none of their ability to obey his commands by the fall; they are as really able to obey every divine command as Adam was when he came out of the forming hand of his Maker."—*Mass. Miss. Magazine, as quoted in Ely's Contrast*, p. 75.

kept up incessantly for a number of days, varying from four to twelve or thirteen; and hence the various methods of dividing congregations, from which such valuable effects have often resulted. Variety, in truth, is stated to be essential to the system: something to break in upon the ordinary routine of religious services, by the very regularity of which, perhaps, much may be done to lull the mind into slumber in the midst of awakening truths. That much wisdom is necessary to the beneficial use of such methods, we have no inclination to deny; but we are fully convinced that the system which employs them is founded upon right principles, and that they need only to be wisely used in order to produce effects of extraordinary power.

Among the various methods adopted for the diffusion of the gospel in the United States, the holding of "camp-meetings," a practice prevailing chiefly among the Methodists, has attracted considerable attention and animadversion. When such a meeting is announced, presently all the roads, sometimes for a hundred miles round, are covered with travellers on foot, on horseback, and in gigs or wagons, hastening themselves and their families to this grand celebration. The centre of a forest, "deep, dark, lonely, and almost impenetrable," is the theatre usually chosen. The native tenants of the wood being frightened away by the noise and tumult, it is taken possession of by this immense congregation. The horses being tied to the trees, and the wagons ranged in rows along the skirts of the forest, the interior is prepared for the purpose by cutting down the trees, and laying their branches along the ground to be used as seats; the space is railed round, and a pulpit elevated. Religious services are then kept up for several days. Great evils have been ascribed to these meetings; but while it would obviously be too much to expect that such an occasion should attract no persons of profligate character, or that they should not avail themselves of such an opportunity for licentious excesses, the unsparing manner in which the accusations have been brought, throws great suspicion upon the charges themselves. What is unusual may easily be deemed wrong; and when a thing is ranked as an evil, nothing is easier than to imagine mischiefs which do not exist, and to exaggerate those which do. Admitting such meetings to be in themselves undesirable, it may be questioned whether, in the actual state of the republic, some such services are not necessary; and whether efforts of any other kind could adequately convey religious instruction to a population so widely dispersed among the vast forests and prairies of the west. It is a relief, at least, to

know that *all* testimony is not against them. Mr. Cooper, who is at all events no enthusiast in religion, speaks of such services as "alike impressive and beautiful." "It is a fashion," he adds, "to ridicule and condemn these meetings, on the plea that they lead to excesses and encourage superstition. As to the former, the abuse is enormously exaggerated, though, beyond a doubt, there are individuals who attend them that would seek any other crowd to shield their vices; and as to the latter, the facts show, that, while new and awakened zeal, in ignorant persons, frequently breaks out in extravagance and folly, they pass away with the exciting cause, and leave behind them tender consciences and a chastened practice."

Before closing this chapter, we must take a passing notice of the important theological institutions, with which it may be said that the republic abounds. This spacious territory, notwithstanding its recent settlement, is almost studded over with colleges and universities. Of the rank of these in relation to general literature some notice will be taken in the following chapter; we only observe here, that in many of them there is a theological department of great value and efficiency. Besides these, there are also a number of strictly theological seminaries, of which a tabular view is annexed, devoted entirely to the training of ministerial candidates. The American Education Society is a valuable auxiliary to these; taking for its object, and pursuing it in a very catholic and praiseworthy spirit, the pecuniary provision necessary for eligible candidates, when they are destitute of resources for completing their education. A new, and hitherto, we believe, a peculiar feature in educational institutions, has been recently introduced into some of the transatlantic theological seminaries, namely, that of combining study with manual labour; several hours daily being devoted to some vigorous bodily employment. The principal object sought by this arrangement, appears to be the preservation of health of body and elasticity of mind; and, so far as experience has hitherto gone, the results are highly favourable to the wisdom of its adoption. The number of theological institutions in the United States decisively indicates the value which the professors of religion there attach to an educated gospel ministry.

The benevolent institutions of the republic, on which, perhaps, we may here make the single remark we have to offer, although most of them of comparatively recent origin, and most of them formed in generous imitation of British example, are of extraordinary vigour for their youth, of rapid growth, and of great promise. Their general denominations,

and the amount of their receipts for the years 1829 and 1830, will be found in one of the tables at the end of the chapter.

We may conclude this chapter with a general view of the religious character of the republic in the words of a pious English traveller.* The extent in which vital religion prevails here is known only to the Searcher of hearts; but there is the strongest reason to believe that it is very considerable. I am disposed to think that a cursory traveller visiting England and America, without prejudice, and with equal opportunities of observation, would draw a more favourable inference with respect to the state of religion in the Atlantic cities of the eastern and middle states, than with respect to the towns or cities of the former. I confine my supposition to the Atlantic cities, because the benighted shores of the Gulf of Mexico, and many portions of the western wilds, possess few features in common with our favoured country, and should rather be compared with our colonial possessions in the East or West Indies. Indeed, I might include extensive districts in the back parts of many of the Atlantic states, where population

is thinly scattered, and opportunities of public worship occur only once or twice a month. In some of these, I thought I observed great coldness in religious concerns; the unfrequent return of public ordinances rendering the inhabitants rather less than more willing to avail themselves of them when offered. I felt more disappointed in such districts, than in the frontier settlements. In the latter, some spiritual as well as temporal privations are naturally to be expected, though I thought their inhabitants often exhibited greater solicitude for schools and churches than those of the former. In fact, the new settlers from the Atlantic states have, in many cases, participated in the advantages of that general revival of religion which promises to be the characteristic of modern times; and before their zeal has had time to cool in solitude and separation, it has often secured a provision for those religious ordinances by which it may be cherished and sustained. But the back parts of Pennsylvania and Virginia were settled in less auspicious days; and we must not be surprised if the flame of piety, burning less brightly at that time, even on the coast, should have grown pale and sickly when removed into an atmosphere which ministered little to its support.

* Mr. Hodgson.

THEOLOGICAL SEMINARIES.

Name.	Place.	Denomination.	Com. operation.	No. educa.	Stud. in 1831	Volumes in Library.	No. Prof
Bangor Theological Seminary	Bangor, Maine . .	Congregational . .	1816	50	14	1,200	
Theological Seminary	Andover, Mass. . .	Congregational . .	1808	514	139	10,000	4
Theological School	Cambridge, do. . .	Cong. Unitarian . .	1824	87	33	...	4
Massachusetts Episcopal Theological School . .	Ditto Ditto . . .	Episcopal	1831	..	..	...	4
Theological Institution	Newtown, do. . .	Baptist	1825	25	22	1,020	2
Theological Department, Yale College	New Haven, Ct. . .	Congregational . .	1822	70	48	...	3
Theological Institution, Episcopal Church . . .	New York, N. Y. . .	Protestant Epis. . .	1819	134	28	3,600	4
Theological Seminary of Auburn	Auburn, ditto . . .	Presbyterian . . .	1821	157	51	4,000	3
Hamilton Literary and Theological Institution . .	Hamilton, do. . .	Baptist	1820	100	80	1,600	4
Hartwick Seminary	Hartwick, do. . .	Lutheran	1816	..	..	...
Theological Seminary, Dutch Reformed Church .	New Brunswick, N.J.	Dutch Reformed . .	....	..	24	...	
Theological Seminary, Presbyterian Church, U.S.	Princeton, ditto . .	Presbyterian . . .	1812	537	92	6,000	3
Seminary, Lutheran Church, United States . . .	Gettysburg, Pa. . .	Evangelical L. . .	1826	..	43	6,200	2
German Reformed	York, ditto . . .	German Reform. Ch.	1825	11	14	...	2
Western Theological Seminary	Alleghany T. ditto .	Presbyterian . . .	1828	..	22	3,964	2
Episcopal Theological School, Virginia	Fairfax County, Va.	Protestant Epis. . .	....	..	19	1,500	3
Union Theological Seminary	Prince Ed. Co. do. .	Presbyterian . . .	1824	30	42	3,000	3
South Theological Seminary	Columbia, S. C. . .	Ditto	1829	..	9	...	2
South-Western Theological Seminary	Maryville, Ten. . .	Ditto	1821	41	22	5,500	3
Lane Seminary	Cincinnati, Ohio . .	Ditto	1829	..	..	...
Rock Spring Seminary	Rock Spring, Il. . .	Baptist	1827	..	5	1,200	1

There are Roman Catholic Theological Seminaries at Baltimore and near Emmitsburg, Maryland; at Charleston, South Carolina; at Bardstown and in Washington county, Kentucky; and in Perry county, Mobile.

RELIGIOUS DENOMINATIONS.

Denominations.	Ministers.	Churches or Congrega.	Communicants.
Calvanistic Baptists	2,914	4,394	304,827
Methodist Episcopal Church	1,777		476,000
Presbyterians, General Assembly	1,801	2,253	182,017
Congregationalists, Orthodox	1,000	1,270	140,000
Protestant Episcopal Church	558	700	.....
Universalists	150	300	.....
Roman Catholics . . . . .	.....	.....	.....
Lutherans	205	1,200	44,000
Christians	200	800	25,000
German Reformed	84	400	17,400
Friends, or Quakers . . . . .	.....	400	.....
Unitarians, Congregationalists	160	193	.....
Associate, and other Methodists	350	.....	35,000
Free-will Baptists	300	400	16,000
Dutch Reformed	159	194	17,888
Mennonites	200	.....	30,000
Associate Presbyterians	74	144	15,000
Cumberland Presbyterians	50	75	8,000
Tunkers	40	40	3,000
Free Communion Baptists	30	.....	3,500
Seventh-day Baptists	30	40	2,000
Six-principle Baptists	25	30	1,800
United Brethren, or Moravians	23	23	2,000
Millennial Church, or Shakers	45	15	.....
New Jerusalem Church	30	28	.....
Emancipators, Baptists	15	.....	600
Jews and others not mentioned . . . . .	.....	150	.....

BENEVOLENT SOCIETIES.

Name.	Presidents.	Forma	Income. 1828-9.	Income. 1829-30.
			<i>Dollars.</i>	<i>Dollars.</i>
Connecticut Missionary Society	Hon. Jonathan Brace	1798	2,070 33	3,013 06
Philadelphia Bible Society	Right Rev. William White, D. D.	1808	7,724 41	
American Board Foreign Missions	John C. Smith, LL. D.	1810	102,000 00	106,928 26
American Baptist Board Foreign Missions	Rev. Jesse Mercer	1814	16,061 90	20,000 00
American Tract Society, Boston	Hon. William Reed	1814	13,896 18	11,102 06
American Education Society	Samuel Hubbard, LL. D.	1816	30,434 18	30,710 14
American Asylum, Deaf and Dumb	Hon. Nathaniel Terry	1816	2,341 55	.....
American Bible Society	Col. Richard Varick	1816	143,184 33	170,067 55
Presbyterian Board American Education Society	Arthur Tappan, Esq.	1817	.....	12,632 00
Board Missionary General Assembly	A. Green, D. D., LL. D.	1818	8,000 00	12,632 43
Methodist Missionary Society	Rev. Elijah Hedding	1819	14,176 11	13,128 00
Board Education General Assembly	Thomas M'Auley, D. D.	1819	.....	.....
American Colonization Society	Charles Carrol	1819	19,561 93	20,295 00
Dutch Reformed Missionary Society		1822	4,470 71	4,604 00
American Sunday School Union	Alexander Henry, Esq.	1824	18,527 00	70,521 70
Baptist General Tract Society	Rev. William T. Brantly	1824	5,256 76	5,536 39
Prison Discipline Society	Hon. William Jay	1825	3,531 00	3,353 52
Massachusetts Sunday School Union	Hon. William Reed	1825	1,018 80	1,465 46
American Tract Society	S. V. S. Wilder, Esq.	1825	60,000 00	60,210 00
American Temperance Society	Marcus Morton, LL. D.	1826	.....	.....
American Home Missionary Society	S. Van Rensselaer, LL. D.	1826	26,997 31	33,229 00
American Seamen's Friend Society	S. Thompson, LL. D.	1826	1,214 38	4,159 87
Massachusetts Missionary Society, reorganized	Leonard Woods, D. D.	1827	5,247 32	.....
American Peace Society		1828	.....	495 85
African Education Society	Right Rev. Wm. Meade, D. D.	1830	.....	.....
			485,714 20	584,084 29

CHAPTER III.

LITERATURE--ARTS--MANNERS.

It has been our aim, in treating of the varied subjects to which the plan of the work has directed our attention, to avoid all unnecessary comparisons between the circumstances and condition of the republic, and of our own country, and to leave our readers to form their own judgment on the facts which have been laid before them; but the topics of the present chapter are of a character which frequently require comparison in order to render them intelligible: we trust, however, to be able to prove that even this process

* From the extension of commercial relations, and from the numerous conquests of the mother country, it would have been natural to expect that her language would have, in process of time, become somewhat a different one from that of her colonies in this country: but our commerce has followed hers so closely, and we have had so entirely the benefit of her mass of literature as soon as it was known to her own people, that the first adoption of a foreign word, or the slightest change in the use of one of her old stock, has been noticed on this side of the Atlantic; and we have wisely followed the public taste of the mother country, nor vainly thought that it would be wisdom to struggle for an independency in letters, as far as they regarded the use of our vernacular. This language was our birthright as Englishmen, and its preservation in its purity clearly shows how much we value it. The language that is addressed to the ear alone is soon changed or lost, but that which is addressed to the eye as well as the ear, is long preserved by a twofold impression upon the mind. The sight is more faithful than the ear, and preserves her knowledge longer; both are necessary to keep a language alive in its purity. The study of the language of a people is one of the best methods of sounding the depths of their knowledge, and of measuring their advancement in arts and arms, and of ascertaining the nature of their general pursuits and habits; and perhaps it may not be going too far to say, that geographical positions may be known by the examination of a nation's vocabulary alone. The soft air of Italy and France has given, in a long succession of years, by natural causes, operating upon body and mind, and which might be easily analyzed, if we could take the pains to do it, a delicious sweetness to the tones of the human voice, a melody to the sounds of words, and a harmony in the construction of sentences, which the inhabitants of the colder regions of the north can never know among themselves. This principle is tested by the still softer and more musical notes of the West India creoles. With them almost every word is vitiated in pronunciation, and reduced to a sort of infantile imbecility, yet it is most musical. The English language has not with us, generally speaking, been deeply studied by those who use it, either for the common business of life, or by those who make it a vehicle of matters of high import in enlightening and directing their countrymen.

English etymology has not, until lately, been a part of a classical education. Our scholars have been content to take, and use, words as they found them, sanctioned by good writers, without much inquiry into their derivations, or primitive significations; nor is it my object to go further in these remarks than to show, that we have kept a constant watch over our mother tongue, and if we have sometimes, after great English models, laboured to sink many of the good old words of our language, and to supply their places by those formed from the Latin and Greek languages, yet that we were ready, from taste and judgment, to go back again, and take those discarded, home-bred words, of strong meaning and peculiar fitness, whenever the established writers have led the way. Several modern scholars have shown us the force, precision, and even beauty of our old English, and we hail this returning to the homestead as an unfailling sign of good judgment. I have thrown together a few observations upon our language, to induce the English scholar to examine the treasures he is in possession

may be accomplished without manifesting the prejudices of nationality to the absurd excess which some, even of the most talented publications of the parent state, have exhibited. As if desirous to be revenged on the republic for the substantial advantages it possesses, they pour out a torrent of contemptuous abuse on their literature and manners.

The language of the United States, for the most part, differs so slightly from that of the middle and southern counties of England, that it requires some considerable discrimination to ascertain any points of distinction; and those which are perceptible rather pertain to accent and intonation, than affect the sense.* It is

of, and to show the reader, that if our fathers' style does not always suit the present taste, yet that they were masters of their vernacular, as well as deeply read in the learned languages. And this I shall do, not by pointing out particular passages, but by calling the attention of the reader to the general tenour of their works.

It is the belief of the learned, that all languages had a common origin; for there are words in all the languages they have examined, which bear relationship to each other. Sometimes the resemblance or kindred features are near and strong, at other times remote, but containing such resemblances as can not be mistaken: and until some other account more satisfactory is given by some retrospective seer, I am willing to take the account given by Moses of the confusion of tongues, as sufficiently true to answer the phenomenon which has no other solution. I am a lover of words, for I do not believe that there can be much reasoning of a moral nature without them; and sure I am, that no man ever despised the science of words who understood it to any considerable extent. It may be true, that the mind may be so much engaged in the pursuit of various tongues as to enfeeble its force in more severe studies; but the literary world exhibits so few instances of this nature, that we need not fear the effects of a pretty liberal attention to the languages; certainly, a careful examination of our mother tongue will not be thought improper by those who object to the attention paid to the learned languages. The origin, the history, the sweetness, the copiousness, the force and majesty, and importance of the English language, are subjects worthy the attention of the English scholar in our country at the present day, when so many facilities are offered him for the study of it; such facilities, that one may learn more in six months upon this branch of knowledge now, than he could have done in ten years if he had commenced half a century ago.

The language of the ancient Britons, from the time they were first known to the Romans, was Teutonic, or Scythian. The people were rude and fierce, and their language had the same cast of character, as far as we know any thing about it. When Julius Cesar first landed on the shores of Albion, the people exhibited the highest traits of courage, and met the polished armour of the skillful Roman soldiers in dauntless nakedness. From this time, which was before the christian era, until the conquest of Alaric, more than four centuries, these rude people were instructed by the Romans in arts and arms. The sons of the native kings and chiefs were taught the philosophical and polished language of their conquerors; and this instruction was pursued and enforced as a mean of bringing the Britons to a state of quietude and obedience. During this time many of the Roman words had found their way into the native language, or at least those formed from the Latin were in use. This is more evident in the names of places, perhaps, than in any other class of words. Those Britons who acquired the Latin, wrote the native language in the Roman character, as we now write the Indian dialects, or different languages of the several tribes in the same character at this day. If the Scythians brought letters with them from Asia, they had probably been lost; or if any relic of them was left, they were only used as a sort of a Cabala, as the fragments of some languages were by the

matter of surprise, indeed, that the idiom of the English language has undergone so little alteration. Several of the differences which exist arise from the

Druids—such as by them were called Runic characters, something out of which to make a charm.

About the middle of the fifth century (449) the Saxons made their first invasion, of any importance, of the island of Britain. Soon after Hengist gained a foothold, Horsa followed; and Cedric and other invaders took the same course; but it was not until after a lapse of many years, that the island was conquered; and then, not from the strength of the invaders, but from the dissensions of the natives. This conquest was, however, a blessing; for, notwithstanding the Saxons were barbarous as well as the Britons, yet they were a fearless, roaring race of men, who had made more improvements in the arts of life than the ancient Britons, and their habits of thinking were more enlarged, and approximated nearer to civilized life, than those of the natives of the island. The laws and institutions of the Saxons were of a higher mental character than those of most other nations then about them on the continent; but the Saxons received a vast accession to their stock of knowledge, by the introduction of christianity into the island in 596, through the auspices of Pope Gregory, a most benevolent representative of Saint Peter. This father of the church sent the learned and pious Augustin on a mission to Britain, who, after many struggles, succeeded in diffusing the doctrines of the gospel amongst them, and inspiring a taste for learning, and the arts of industry, and social life. If not before, certainly at this time, the Saxon tongue became a written one, and was soon expanded and improved by the attentive study of it among those ecclesiastics, who wished to diffuse through it the knowledge of the scriptures, until then a sealed book to the Saxons, and then only partially opened.

About ninety years after the introduction of christianity into the island of Britain, Alfred the Wise, of Northumbria, began his reign. He had passed his youthful days, when, by the death of his brother, he came to the throne of his father. His early years, and many of his riper ones, had been spent in study in the cloisters of Ireland, whose ecclesiastics were then more learned than all those on the continent, if we except a few in Italy. The Irish institutions of learning at this period furnished professors for those of France, Germany, and many other places. Alfred, when in possession of power, did not forget his taste for letters, but gathered about him as many learned men as he could obtain. Adhelm, a West-Saxon poet, wrote for his instruction and amusement "Flowers of the Bible," probably a sort of dramatic paraphrase on some portions of scripture; and also treated his royal patron with some touches of the philosophy of that age. The wise king bent his mind to improving his people and their language at the same time, and shone conspicuously as a firm supporter of christianity and letters. He was the first to give a relish for these pursuits to his nobles, who had hitherto found no delight but in war, or the chase.

The improvement of the Saxon tongue was, generally speaking, constantly going on, although the knowledge of the Latin had greatly declined from the time of Alfred the Wise, until the time of Alfred the Great, who was born in eight hundred and forty-nine. This monarch fills a wider space in the Saxon history than all his predecessors, or those Saxon kings who came after him, although his grandson was quite as great a man as himself. Alfred was a pet child of his father, who took his son to Rome when he was quite young, and brought him to France also, when Athelwelf, the father, married Judith, the daughter of Charles of France; but in all these journeyings the young Alfred had never learned to read. It was his fond step-dame who set about this task, and succeeded in laying the foundation of making him one of the greatest scholars of that age. He sought learned and good men from Ireland, France, and in his own country, and commencing with the poetry of his own language, which had taken fast hold of his affections when young, he pursued it, until he had exhausted all the ballads and legends which were written in Saxon, and then set about enlarging the narrow limits of the Saxon muses, by compositions of his own which, in fact, surpassed in

Americans expressing their meaning by words which were in use at the time of the emigration of the "pilgrim fathers;" while, in the mother-country, other

excellence all the poetry of his country, as he did his predecessors in civilization and knowledge. He was not content with this, but learned the Latin, Greek, and Hebrew, and assisted to bring the rich treasures of these repositories of wisdom into his own market, for the supply of his own people, and the refinement of his own court. He was not a mere book-worm neither, for he was as ready to fight as to write; to enforce laws as to make them. He was no pedant, but the great instructor of his people, anticipating ages by the power of his understanding, and the reach of his genius. Institutions of learning arose under his fostering care. The son of Alfred, Edward the Elder, was not a whit behind his father in his attention to the encouragement of learning, but having a regular education, there was no necessity for such efforts as were made by his father; and the infant institutions his father established were in a flourishing state. The son of Edward, Athelstan, was a more powerful prince than his father or grandfather had been, and extended his intercourse with the world more widely. The monastic institutions which Alfred founded, Athelstan endowed, and gave them books collected from every country to which he had access. Whatever we may think of monasteries now, they were the protectors and preservers of all the learning of antiquity, and the faithful trustees of all the knowledge committed to their care when they were first created. Through several changes of fortune, now smiled upon by Edward the Confessor, and then neglected by his ambitious successors, learning flourished or declined in the more public institutions, until the invasion of William the Conqueror; but it was not often that contemplation was disturbed in the convent's shades, for ages after his accession to the throne of England. Here, indeed,

"The little, fat, round oily man of God,"

laughed, slept, or idled life away; "but these deep solitudes and awful cells," contained men of true piety and profound learning; and to whose industry and wisdom we are now indebted for much of our present advancement in knowledge.

In 1066, William defeated Harold, and became king of England. His triumph was so complete, that a sudden revolution was made in the information, taste, and pursuits of men in that island. It was natural for him to think his Norman language, uncouth and rough as it was, greatly superior to that of the Saxon, which he did not understand. The church and convent, and perhaps court records, which had been kept in Latin, were now, in many instances, ordered to be in Norman. The ballad makers who flocked round the conqueror sung his praises in the Norman measure and language, and even the deeds of former kings, whose praises had for ages been echoed in pure Saxon, were now sung in the rude rhymes of the minstrels of the Conqueror: and such was the influence of the new order of things, that in the course of half a century the pure Saxon was no longer to be found in England; and a new language, the beginning of what is now our vernacular tongue, grew up there. Ellis, a learned writer on these subjects, says this was effected in the course of forty years after the conquest, and that this change in the language of England was completely brought about in this time; but we should be nearer the truth, I imagine, if we should allow nearly a century for this transformation. The language was indeed changed to the eye and the ear; but still a great proportion of all its elements remained, and will for ever remain, a strong proof that in all the permanent improvements in civilization and knowledge, the Saxons were greatly in advance of their conquerors. This change assisted the advancement of knowledge; for language, when advanced towards perfection, is the most labour-saving machine that ever ingenuity attempted to invent. The scanty words found in a primitive language are inadequate to the conveyance of refined or extended thought. By these simple elements the nice shades of difference in thought could be no more than indicated, not fully conveyed by the words written; therefore much was left to the imagination of readers, which was supplied when language was only spoken by

terms have been substituted:—as, for instance, the word “sick,” which the Americans continue to use instead of “ill,” or “indisposed.” “The best English,”

the looks, gestures, and accents of the speaker; hence arose the superiority, in the early times, of eloquence over written compositions. The oral communication was then a better method of conveying ideas than the record, however fully exemplified by the scanty language then in use, without taking into consideration the charm there has always been in a well toned and well regulated voice.

As language improved and expanded, the noun and the verb, the first elements of language, were found insufficient, with all their declinations and inflections, to convey thought accurately and forcibly. The connecting links, the qualifying terms, the affirmations and negations, with the prefixes and affixes, to increase, change, or qualify the power of the words, were sought for, and obtained; sometimes by a happy hit, which, by frequent repetitions, in time became usage, and usage law; or by the elaborate reasonings of the scholar upon the doctrines of analogies, or the principles of an easy composition or arrangement of sentences. Sometimes the understanding directed in this work of composition and structure of language, but oftener the ear; and when at times the wise and the learned reasoned and laid down the rule, the great mass of the people changed it for euphony sake, and the learned at length came into the same use; for custom is the despot over language. In the laws of language, as well as in those of national policy, the people, after all, are the revising tribunals; not by their sudden impulses, but by the sober reflection of years; and even their own opinions are revised by their own experience.

The English literature received its share of the acquisitions of learning made by the crusaders; and the language of course was greatly benefited by the taste which these heroic adventurers awakened and cherished. In these epochs of delicacy and refinement, many of the coarse words were disused, and those better chosen and more appropriate became fashionable. The English language gained much from the days of Chaucer to those of Spenser; and more by the taste of Shakspeare than by any other person.

It is a matter of some singularity, that so little of the Saxon language is known by our scholars, when on a strict examination we find that our poets and prose writers have used so many words derived from the Saxon. In Shakspeare, taking out the proper names, eight words out of nine are found to be of Saxon origin, as exemplified by several quotations taken promiscuously from the works of the great dramatist. Milton, tried by the same rule, would give the proportion of six out of seven. Johnson's works, as he coined Latin words and used them freely, about five sixths are Saxon. In our translation of the Bible, and the writings of Addison and Goldsmith, and other writers of simplicity and purity, the proportion of words of Saxon origin is still greater than in Shakspeare or Milton. Our own declaration of independence, and many other American productions, are written in the style which contains a great proportion of these words of pure Saxon origin. I will give a few specimens of the use of Saxon words among our best writers; fair samples of their style, and the use of good old English. The Saxon words are in *italics*.

*But no! the freshness of that past shall still
Sacred to memory's holiest musings be;
When through the ideal fields of song at will,
He roved, and gather'd chaplets wild with thee;
When, reckless of the world, alone and free,
Like two proud barks, we kept our careless way,
That sail by moonlight o'er the tranquil sea;
Their white apparel and their streamers gay,
Bright gleaming o'er the main, beneath the ghostly ray.*

SANDS.

*While thus the shepherds watch'd the host of night,
O'er heaven's blue concave flash'd a sudden light,
The unrolling glory spread its folds divine,
O'er the green hills and vales of Palestine;*

says Mr. Cooper, in his *Notions of the Americans* vol. ii. p. 171, “is spoken by the natives of the middle states, who are purely the descendants of English

*And lo! descending angels hovering there,
Stretch'd their loose wings, and in the purple air
Hung o'er the sleepless guardians of the fold:
When that high anthem, clear, and strong, and bold,
On wavy paths of trembling ether ran:
Glory to God—Benevolence to man—
Peace to the world.*————

PIERPONT.

A good man's piety and virtue are not distinct possessions; they are himself, and all the glory which belongs to them belongs to himself. What is religion? Not a foreign inhabitant, not something alien to our nature, which comes and takes up its abode in the soul. It is the soul itself, lifting itself up to its Maker. What is virtue? It is the soul listening to, and revering and obeying a law, which belongs to its very essence, the law of duty. We sometimes smile when we hear men decrying human nature, and in the same breathing exalting religion to the skies, as if religion were any thing more than human nature, acting in obedience to its chief law.

CHANNING.

There are some poems in the Saxon language which strongly show the rude, bold, and superstitious character of the Saxons before christianity was introduced among them, or had generally spread through the island. The *Volupsa*, the sybil of the Saxons was called *Vola*, is a poem given in an English translation by Turner, from whom, with Bede, Ellis, Tooke, and Campbell, I have derived much of my information on this subject of Saxon literature. It is a rhapsody on the creation, according to the Saxon notions of it, and the first lessons of wisdom given to man from his Maker. The successive generations, with their history, are introduced, but only as a landscape is seen by the transitory flashes of the lightning amid the darkness of the storm. The Welch wrote at the same time with abruptness, and threw the fire and fanaticism of their Druids into the form of some wild and magic strain.

True poetry can not exist until there is a considerable degree of mental cultivation in the bard who makes it. Men must think, and feel, and reason, too, from cause to effect, before any delicacies of poetry can be developed; but the strong ebullitions of genius raving to soar to the regions of light and futurity, are scattered through the early ages of poetry; and time gives these productions, perhaps, an interest beyond their real merits.

The English language is now so enriched from the sources I have mentioned, and other sources more recondite, and also from some more recently made contributions to our stock of words, particularly in terms of banking, trade, and revenue, that it may challenge any other language to show more words of clear and definite significations, than we have legitimized and secured. The terms of art are every day increasing, as well as those of the sciences, and are constantly added for common use to our vocabulary. These, in general, have been formed by new applications of old words to the subjects, or by new compounds made to convey the idea of the use of the invention.

The English language is full of strength. There are no feeble words in it, such as are often made by an effeminate people; but every part of the fabric is of good old materials or approved new ones. There is no thought, or shade of a thought, that the English language is not capable of conveying to the mind, if used by a judicious, learned, and spirited writer. In the use of language to gain, or to defend a point, much depends upon the skill and judgment of the writer or speaker. The vocabulary of angels would fail to propagate a thought, *that would wake the genius or mend the heart*, in the mouth of dulness or apathy. The soul of the writer or speaker must breathe into his language the breath of life. The earthly particles must be melted, as it were, into the ethereal, to give a composition the spirit of intelligence and genius. The following extracts, the first from Shakspeare, and the other from Milton, show the natural strength of the English language; for

parents, without being the descendants of emigrants from New England. The educated men of all the southern Atlantic states, especially the members of

without any apparent effort, or artful selection, the words admirably convey the elevated thoughts which the authors had in their minds, and intended to put into an imperishable form.

'The cloud-capt towers, the gorgeous palaces,
The solemn temples, the great globe itself;
Yea, all which it inherit, shall dissolve,
And, like the baseless fabric of a vision,
Leave not a wreck behind.'

Tempest, Act iv. Scene 4.

'For in those days might only shall be admir'd,
And valour an heroic virtue call'd:
To overcome in battle, and subdue
Nations, and bring home spoils with infinite
Manslaughter, shall be held the highest pitch
Of human glory, and for glory done
Of triumph, to be styl'd great conquerors,
Patrons of mankind, gods, and sons of gods,
Destroyers rightlier call'd, and plagues of men.
Thus fame shall be achieved, renown on earth,
And what most merits fame in silence hid.'

Milton, b. xi.

The beauty of the English language is conspicuous in English poetry and prose. It is fortunate for our vernacular, that the language of poetry does not differ, except in a few words, and perhaps in no one, from our prose; for in such a formation of language, all that is gained in the interchange with other nations in prose, is transferred to verse; and all that is created or refined by verse, is given over to prose, after due trial and final judgment of its use or beauty, at the tribunal of public criticism. The following poem is a specimen of that powerful, graceful beauty, which excites admiration for its elegance, and respect for its strength. It seems to come upon us with that calmness and divinity which it describes in the god of wisdom and taste, in his easy victory over the Python. What a beautiful fable this is; it was made to show how easily refinement and wisdom can overcome and destroy the monster of the literary world—a depraved taste.

PRIZE POEM—THE BELVIDERE APOLLO. (1812.)

"Heard ye the arrow hurtle in the sky?
Heard ye the dragon monster's deathful cry?
In settled majesty of fierce disdain,
Proud of his might, yet scornful of the slain,
The heavenly archer stands—no human birth,
No perishable denizen of earth!
Youth blooms immortal in his beardless face,
A god in strength, with more than god-like grace!
All, all divine—no struggling muscle glows,
Through heaving vein no mantling life-blood flows;
But animate with deity alone,
In deathless glory lives the breathing stone.

"Bright-kindling with a conqueror's stern delight,
His keen eye tracks the arrow's fateful flight;
Burns his indignant cheek with vengeful fire,
And his lip quivers with insulting ire;
Firm-fix'd his tread, yet light, as when on high
He walks the impalpable and pathless sky;
The rich luxuriance of his hair, confined
In graceful ringlets, wantons on the wind,
That lifts in sport his mantles' drooping fold,
Proud to display that form of faultless mould.

"Mighty Ephesian! with an eagle's flight
Thy proud soul mounted through the fields of light,
Viewed the bright conclave of Heaven's blest abode,
And the cold marble leapt to life a god:

those families which have long been accustomed to the better society of their towns, also speak an English but little to be distinguished from that of the

Contagious awe through breathless myriads ran,
And nations bowed before the work of man.
For mild he seemed as in Elysian bowers,
Wasting in careless ease the joyous hours;
Haughty, as bards have sung, with princely sway,
Curbing the fierce flame-breathing steeds of day;
Beauteous as vision seen in dreamy sleep
By holy maid on Delphi's haunted steep;
'Mid the dim twilight of the laurel grove,
Too fair to worship, too divine to love.

"Yet on that form, in wild delirious trance,
With more than reverence gazed the maid of France;
Day after day the love-sick dreamer stood
With him alone, nor thought it solitude;
To cherish grief, her task, her dearest care,
Her one fond hope—to perish—or despair.
Oft as the shining light her sight beguiled,
Blushing she shrunk, and thought the marble smiled;
Oft, breathless listening, heard, or seemed to hear,
A voice of music melt upon the ear.
Slowly she wan'd, and cold and senseless grown,
Closed her dim eyes, herself benumbed to stone.
Yet love in death a sickly strength supplied,
Once more she gaz'd, then feebly smiled, and died."

Sweetness in a language is intimately connected with beauty. Beauty may perhaps consist without sweetness; no one of taste would say that the head of Apollo was a sweet one, while all agree that the face of Venus is full of sweetness; yet, if beauty can exist without sweetness, the converse of the proposition would be offensive to taste and truth, to say that sweetness was ever found without beauty. The impression which beauty leaves on the mind, is pleasure and admiration; but when sweetness is superadded, the charm is increased to love and rapture. I have mentioned images that strike the senses to illustrate those which are sentimental. This is the only method by which any thing ethereal can be made to affect us forcibly, as we are now constituted. The dirge in *Cymbeline* is full of sweetness and delicacy.

"To fair Fidele's grassy tomb
Soft maids and village hinds shall bring
Each opening sweet of earliest bloom,
And rifle all the breathing spring.

"No wailing ghost shall dare appear
To vex with shrieks this quiet grove;
But shepherd lads assemble here,
And melting virgins own their love.

"No wither'd witch shall here be seen;
No goblins lead their nightly crew;
The female fays shall haunt the green,
And dress thy grave with pearly dew!

"The redbreast oft, at evening hours,
Shall kindly lend his little aid,
With hoary moss, and gathered flowers,
To deck the ground where thou art laid.

"When howling winds, and beating rain,
In tempests shake thy sylvan cell;
Or 'midst the chase, on every plain,
The tender thought on thee shall dwell;

"Each lonely scene shall thee restore;
For thee the tear be duly shed;
Belov'd, till life can charm no more,
And mourn'd, till Pity's self be dead."

best circles of the mother-country. Still there are shades of difference between these very persons that a nice and practised ear can detect, and which, as

The wailing ghost—the withered witch—the howling winds, which at first thought seem to injure the loveliness of the picture, form a fine contrast to all the tender and affectionate images which are grouped around the grassy death-bed of beauty and innocence. The effect of this contrast is forcibly seen in the picture of Prospero, with the snow of many winters upon his reverend head, in the majesty of science and wisdom, and paternal affection, contrasted with the manly youth of Ferdinand, and the delicacy and beauty of Miranda; and the finishing of the whole is the ugliness and ferocity of Sycorax, with her fiend-begotten Caliban, "*whose nature nurture would not stick to.*"

The majesty of the English language is conspicuous in the following extract from Akenside:

"Look then abroad through nature, to the range
Of planets, suns, and adamant spheres,
Wheeling unshaken through the void immense;
And speak, O man! does this capacious scene
With half that kindling majesty dilate
Thy strong conception, as when Brutus rose
Refulgent from the stroke of Cesar's fate,
Amid the crowd of patriots; and his arm
Aloft extending, like eternal Jove
When guilt brings down the thunder, call'd aloud
On Tully's name, and shook his crimson steel,
And bade the father of his country hail!
For lo! the tyrant prostrate on the dust,
And Rome again is free!"

The majesty of the language is conspicuous also in the following extract:

—————"Different minds
Incline to different objects: one pursues
The vast alone, the wonderful, the wild;
Another sighs for harmony, and grace,
And gentlest beauty. Hence, when lightning fires
The arch of Heaven, and thunders rock the ground;
When furious whirlwinds rend the howling air,
And ocean, groaning from his lowest bed,
Heaves his tempestuous billows to the sky;
Amid the mighty uproar, while below
The nations tremble, Shakspeare looks abroad
From some high cliff superior, and enjoys
The elemental war."

Our own writers furnish numerous specimens of the various characteristics of our language. The chaste, pure, classical language, abounds in Hamilton's prose, and Pierpont's poetry. For sweetness, we might look into Ames's prose, and Percival's verse. Robert Treat Paine would furnish us with many sentences in strong language, in both prose and verse. Dr. Dwight's works might also be mentioned, as exhibiting a fine selection of words and phrases in communicating his thoughts. In fact, a hundred others among our distinguished writers might be quoted for our purpose, to illustrate the statement that our language is copious, beautiful, sweet, majestic, strong, &c., but we will not at this time make these selections, for the reader will probably call to mind as many instances of all these traits in our writers as I can.

I need not dwell long on the importance of cultivating our mother tongue, nor attempt to prove that it is becoming the triumphant language of mankind, when it is known to all that it is now spoken by fifty millions of enlightened freemen, who keep it purer than that used by any other nation; and that the number now, to whom it is vernacular, is five fold greater than it was fifty years ago. As empire travels westward with us, or over the immense plains of Asia with the English, this language, whose origin and history, copiousness, strength, beauty, sweetness, and importance, will carry with it the blessings of sound political and civil

they denote the parts of the union to which they belong, must be called provincialisms. These little irregularities of language solely arise from the want

institutions, the blessings of letters and science, of virtue and religion.

As our knowledge, political, civil, and religious, expands, and our arts and sciences are extended, and the comforts and luxuries of life increase, words of new significations and aptitude are required, to correspond with these advancements. A poverty of words is a sure sign of poverty of thought in those who have had advantages to acquire a full supply. Not only the progress of knowledge, but the fashion of society, has its influence over language; and the time has arrived with us, that no word found in the dictionary of our language, that is used with good taste and judgment, can be considered as too learned for the social circle. It is neither affectation or pedantry to use any proper word in a proper sense. There is too much information diffused through the country, to require that condescension in the learned which strives to be simple and plain in language, in order to accommodate their hearers. The vocabulary of the scholar and the public man, should be opulent and well arranged. There should be no "*res angusta domi*" for an excuse for himself to the public, in his possession of the stores of his mother tongue. These are at his command. Every one's warehouse of words should not only be well stocked, but well sorted and arranged. Every synonyme should be classed for a ready selection. Still, however, I would not be understood to commend that fastidiousness that wakes to contentious valour in defence of an accent, or strives to martyrdom for the support of the pronunciation of a doubtful word or syllable. No, it is only that free, generous, tasteful use of language, and common regard to a just pronunciation, which shows at once the affluence of thought, and the extent and polish of education, that I contend for. The conversation of the social circle is now often rich and elegant, and even when it relaxes to trifling and playfulness. Formerly there was a great difference between the written language and that used in common conversation; but these styles are more nearly assimilated, and both have been benefitted by it. Eloquence has ceased to strut in corsets, and to walk only in measured steps, and to speak only in affected cadences. Nature has assumed her sway, and ease and grace prevail. Strong, beautiful, neat, or delicate thoughts, should each have their appropriate dress. The lion's skin to throw loosely over the shoulders, the succinct tunic, the flowing toga, the sweeping robe, and the transparent veil, should all be ready for clothing for the thoughts of the conversationist, the poet, or the orator, as these thoughts arise in their imaginations, and are marshalled forth by their understandings for use and display. Words should be the vassals of the mind, at the call of memory; but at the same time should always, like the slaves of the faithful, be used only in rigid justice or innocent familiarity. Once profaned by an indecent use, their character is degraded for ever. Necessity is the only true mother of invention in words as well as in other things: wit and profligacy often degrade appropriate words by indelicate uses. The languages of polished nations alone are liable to this misuse or profanation. It is in the reckless plenitude of genius that words are violated. A host of instances might be adduced to illustrate my meaning, if it were proper; but this is rather a subject for the eye, or the imagination, than the ear. One or two instances might be named.

The voluptuaries of the court of Louis 14th, called a pure white wine *Virginis Lac*; this was going far enough in all conscience; but another of a purple colour they called *Lachryma Christi*. To compare the ruddy, joyous drops of the wine-cup, to the tears of a suffering Saviour, was reaching the confines of blasphemy.

Every pure and elegant mind ought to rejoice in a freedom from the fetters of bigotry and the prudery of excessive puritanism; but should never relax his vigils over the chastity of his mother tongue. Morals depend more on taste, than philosophy, in her analysis of the human character, is willing to allow; but no one will deny the correctness of the maxim of inspiration, that "*words filthy spoken are like apples of gold in pictures of silver.*"—*Knapp's Lectures on American Literature.*

of a capital. Throughout all New England, and among most of the descendants of the people of New England, the English language is spoken with more or less of an intonation, derived, I believe, from the western counties of England, and with a pronunciation that is often peculiar to themselves. They form so large a proportion of the entire population of the country, that some of their provincialisms are getting to form a part of our ordinary language. The peculiarity of the New England dialect, (the term is almost too strong,) is most discernible in the manner in which they dwell on the last word of a sentence, or the last syllable of a word. It is not properly drawling, for they speak very quick in common, much quicker than the English; so quick, indeed, as to render syllables frequently indistinct: but, in consequence of the peculiar pause they make on the last word, I question if they utter a sentence in less time than those who dwell more equally on its separate parts. Among men of the world and of education, this peculiarity is, of course, often lost; but education is so common, and the state of society so simple in New England, as to produce less apparent distinction in speech and manners than it is usual to find elsewhere. The middle states certainly speak a softer English than their brethren of the east. I should say, that, when you get as far south as Maryland, the softest, and, perhaps, as pure an English, is spoken as is any where heard. No rule on such a subject, however, is without many exceptions in the United States. The emigration alone would, as yet, prevent perfect uniformity. The voices of the American females are particularly soft and silvery; and I think the language, a harsh one at the best, is made softer by our women, especially of the middle and southern states, than you often hear it in Europe. New York, Philadelphia, and Baltimore, have each their peculiar phrases. Some of the women have a habit of dwelling a little too long on the final syllables, but I think it is rare among the higher classes of society. I do not know that it exists at all as far south as Baltimore. As you go further south, it is true, you get a slower utterance, and other slight varieties of provincialism. In Georgia, you find a positive drawl, among what are called the 'crackers.' More or less of this drawl, and of all the peculiar sounds, are found in the southwestern and western states; but they are all too new to have any fixed habits of speech of their own. The usual vulgar phrases which are put into the mouths of Americans are commonly caricatured, though always founded in truth. 'I guess,' is a phrase of New England: it is used a great deal, though not as often as 'you know,' by a cockney. It proceeds, I

think, from the cautious and subdued habit of speaking, which is characteristic of these people. The gentlemen rarely use it, though I confess I have heard it interlarding the conversation of pretty lips that derived none of their beauty from the puritans. You see, therefore, that it has been partially introduced by the emigrants into the middle states. Criticism is here so active, just now, that it is rapidly getting into disuse.* The New Yorker frequently says, 'I suspect,' and the Virginian, 'I reckon.' But the two last are often used in the best society in the mother-country. The difference in pronunciation and in the use of words, between the really good society of this country and that of England, is not very great. In America, we can only tell an Englishman by what we are pleased to call his provincialisms, and quite half the time the term is correct. I was struck at the close resemblance between the language of the higher classes in the mother country, and the higher classes of my own, especially if the latter belong to the middle states. There are certainly points of difference, but they as often proceed from affectation in individuals, as from the general habits of the two countries. Cockneyisms are quite as frequent in the language of an English gentleman, as provincialisms in the mouth of an American gentleman of the middle states."

We can readily conceive that the Americans must often be strongly tempted to believe from the specimens imported by emigrants, that they speak better English than the natives of Great Britain; for we have found, to our cost, that, although not unacquainted with most of the varieties of our native tongue, the cottagers of some of the most romantic parts of Lancashire and Yorkshire were as unable either to receive or communicate ideas through the medium of words known to us, as though they had been inhabitants of the South Seas. Certainly we found far more difficulty than we have ever done among our Gallic neighbours.

The construction of the English language is a topic which occupies much more frequently (we might almost say, incessantly) the attention of the public in the United States than in Great Britain. The American linguists have been thought presumptuous in supposing they could possibly understand the language better than Murray, or other English grammarians; to an impartial examiner, however, there will appear much force and truth in many of their observations. The following extract from "Strictures on Murray's Grammar,"* may be taken as a specimen:

* Journal of Education, vol. i. p. 425.

"An article," says Mr. Murray, "is a word prefixed to substantives to point them out, and to show how far their signification extends." Again, "There are but two articles, *a* and *the*; *a* becomes *an* before a vowel or a silent *h*." It is not difficult to find words in English resembling the nouns, verbs, adjectives, &c. of the ancient languages; but this was not enough for the first English grammarians; they must find in English as many "sorts of words" as were said to exist elsewhere. Something called an article was found in Greek, and suspected to exist in Latin. *O*, the Greek article, is equivalent to *hic* in Latin, and *hic* in Latin is *this* (in some dialects *thic*) in English. But *this*, Murray calls a pronoun. *The*, his article, is a contraction of *this*, once spelled *thae*, and, afterwards, *the*. *The* has been pressed into the service, and made an article; while *this* has been denied *the* (or *this* or *that*) honour; for two words that are entitled to form a separate class are, certainly, highly distinguished. Now, we venture to say, that, in every important case, *this*, *that*, *these*, and *those*, may be substituted for *the*, without altering the sense. Mr. Murray says that *the* in the sentence, "Nathan said unto David, Thou art *the* man," is peculiarly emphatical; but thou art *this* or *that* man is equally so. "An article, (our author says,) is a word prefixed to substantives," *this* and *that*, *these* and *those*, *one*, *two*, *three*, and every other numeral and ordinal adjective, are prefixed to nouns in the same way, 'to point them out,' and even, 'to show how far their signification extends,' for they effectually limit the signification of the noun. *The* man, *this* man, *that* man, *forty* men, *seventh* man. The words in italic are all articles, if Murray's definition be correct. Thus we have disposed of one article. Not satisfied with one (that is *an*) article, our grammarian must have two. *An* is a contraction of *one*. *An* is generally contracted into *a* before words beginning with a consonant, and *a* does not become *an*, as Mr. Murray asserts; for at no very remote period of our literature, *an* was used before all words. *One* is sometimes spelled *ane*, hence *an*. *A* book is *one* book. The article *un*, which the French grammarians have impressed into the list of articles, is also their numeral adjective. How a numeral adjective can be called indefinite, is hard to conceive. Is *one* or *ten* an indefinite number? The fact is, *a*, *an*, and *the*, are as good adjectives as any in our language; and had there not been an article in the Greek grammar, these words would have been left among the adjectives in ours."

The subject of national education has engaged much attention, overcome many difficulties, and made considerable progress in Great Britain during the

last forty years. Previously to that time, the opinion of the clerical, and perhaps of the lay aristocracy of England, was decidedly adverse to the education of the people at large; but finding that the dissenters would successfully conduct the great work of educating the poorer classes, the clergy resolved, perhaps wisely, not to suffer so powerful an engine to remain in the hands of their opponents; and from these contrary, but co-operating causes, has elementary education become in a good degree general. In the United States, however, the cause of the education of the people has had no such difficulties to contend with, and owes its successful progress to feelings far more honourable. State has vied with state, as to the most effective means of insuring the education of every individual within its borders. In the new states, large grants of land have been made by the general government to constitute funds for the support of public schools; and a reservation of land is made for that purpose, in the laying out of every new township. In other states, enactments have been made by the legislature, compelling every township to provide, by assessment, instruction for its population, and rendering each township subject to indictment and fine if the regulation remains uncompiled with. We do not deem ourselves competent judges as to which of the states has made the best arrangements to attain so desirable a result; and our limits will not permit us to enter on a general collection of the details of the number of public schools, and the amount expended in their maintenance. In most of the states education at the public expense is one of the "rights" of "free-born Americans;" and throughout the union there are very few whites who cannot both read and write. In the state of Massachusetts, by the returns from 131 towns presented to the legislature, it appears that the amount annually paid in those towns for public schools is 177,206 dollars, and the number of scholars receiving instruction is 70,599. The number of pupils attending private schools in the same towns is 12,393, at an expense of 170,342 dollars. The number of persons in these towns between the ages of fourteen and twenty-one who are unable to read or write, is fifty-eight. In the town of Hancock, Berkshire county, there are only three persons between the ages of fourteen and twenty-one, who are unable to read or write, and those three are mutes.

Infant schools have been extensively established in many of the states; and the best mode of conducting early instruction has occupied much attention. We would add the testimony of our own experience to the high importance of the training the human mind

is capable of receiving between the ages of three and six, fully convinced as we are that the complexion of future life is frequently determined by the treatment received at that early age; and would especially urge on the consideration of religious parents, whether the facts they are so ready to attribute to innate hereditary corruption, do not, in truth, to a great extent, result from their own irrational and injudicious treatment, or to that of those whom they employ.

Recently great attention has been bestowed on the improvement of the public schools, and a variety of means have been resorted to to render the teachers themselves more competent for their important work. Institutions for the improvement of schoolmasters are established,* various associations for mutual improvement formed, lectures delivered, libraries accumulated, periodicals on education ably conducted, and the systems of Europe investigated; in fact, every process is in operation which can indicate intense interest—a patriotic persuasion that the stability of the empire depends on the intelligence and information of her people.

Where the elements of education are thus open to all, it cannot be otherwise than that the more wealthy should be desirous of acquiring a larger portion of knowledge for their children than the public elementary schools can be expected to afford. In the principal towns there are private schools, in which this desire may be fully gratified, and as good an education may be obtained as in similar institutions in England, though, perhaps, at an advance of thirty

* One benevolent gentleman, in New York, devotes 800*l.* per annum to this important object.

† A statement of the course of instruction, expenses, &c. in Yale College.

Terms of Admission.—Candidates for admission to the freshman class are examined in Cicero's Select Orations, Virgil, Sallust, the Greek Testament, Dalzel's Collectanea, Græca Minora, Adam's Latin Grammar, Goodrich's Greek Grammar, Latin Prosody, Writing Latin, Barnard's or Adams' Arithmetic, Murray's English Grammar, and Morse's, Worcester's, or Woodbridge's Geography. Jacob's Greek Reader and the Four Gospels are admitted as a substitute for Græca Minora and the Greek Testament.—No one can be admitted to the freshman class till he has completed his fourteenth year; nor to an advanced standing without a proportional increase of age.—Testimonials of good moral character are in all cases required; and those who are admitted from other colleges must produce certificates of dismission in good standing. The students are not considered as regular members of the college till, after a residence of at least six months, they have been admitted to matriculation, on satisfactory evidence of an unblemished moral character. Before this they are only students on probation.

Course of Instruction.—The faculty to whom is committed the government and instruction of the students, consists of a president; a professor of chemistry, mineralogy, and geology; a professor of the Hebrew, Greek, and Latin languages; a professor of mathematics, natural philosophy, and astronomy; a professor of divinity; a professor of rhetoric and oratory; and eight tutors.

The whole course of instruction occupies four years. In each year there are three terms or sessions.

The three younger classes are divided, each into two or three

per cent. on the cost. In some instances, the public schools have intrenched materially on private academies; while in others the case has been reversed. In some of the female seminaries, classical attainments are carried much farther than is deemed desirable in England—Latin, Greek, algebra, and mathematics, forming part of the routine, in addition to philosophy, astronomy, geology, botany, and the usual accomplishments: and a recent traveller complains particularly of the young ladies of Cincinnati being very "blue." It would appear to be characteristic of American education, that a general acquaintance with language and science should be imparted, without pursuing any particular branch to its utmost limit. Under such circumstances, there must be a liability to superficial knowledge in many cases. There is, however, a broad basis laid, on which the refinements of literature will naturally rise, as they are called forth by the increasing improvement of the national taste; and, indeed, the progress of the last few years indicates that the time is not far distant, when "eminent scholars" will not be so rare as they are now presumed to be.

The colleges in the republic are numerous, and dispersed among the different states. Those which have attained the greatest celebrity, are Harvard University and Yale College. As it is our aim to afford information rather than offer opinions of our own, we have appended the systems of education pursued in one of these institutions in a note;† and a table, containing the names of the various colleges through-

parts; and each of the divisions is committed to the particular charge of a tutor, who, with the assistance of the professors, instructs it. The senior class is instructed by the president and professors. Each of the four classes attends three recitations, or lectures, in a day, except on Wednesdays and Saturdays, when they have only two. The following scheme gives a general view of the authors recited each term:—

FRESHMAN CLASS.

- | | |
|------|--|
| | { Folsom's Livy, from one half to two thirds. |
| I. | { Adam's Roman Antiquities. |
| | { Day's Algebra, begun. |
| | { Græca Majora, Vol. I., begun. |
| II. | { Folsom's Livy, finished. |
| | { Græca Majora, continued through the historical part. |
| | { Day's Algebra, finished. |
| III. | { Horace, begun. |
| | { Græca Majora, Vol. II., begun. |
| | { Playfair's Euclid, five books. |

SOPHOMORE CLASS.

- | | |
|-----|--|
| | { Horace, continued. |
| I. | { Græca Majora, continued. |
| | { Euclid, reviewed and finished. |
| | { Horace, finished and reviewed. |
| | { Græca Majora, continued. |
| II. | { Day's Mathematics; Plane Trigonometry, Nature and Use of Logarithms, Mensuration of Superficies and Solids and Isoperimetry; Mensuration of Heights and Distances; and Navigation. |

out the union, and many interesting particulars, extracted from the American Almanac, is given at the close of this chapter. It will be perceived, that the

- III. { Græca Majora, continued.
Juvenal; Leverett's Edition.
Cicero de Oratore, begun.
Day's Mathematics; Surveying.
Bridge's Conic Sections.
Spherical Geometry and Trigonometry.
Jamieson's Rhetoric.

JUNIOR CLASS.

- I. { Cicero de Oratore, finished.
Tacitus, begun.
Græca Majora, continued.
Olmsted's Natural Philosophy and Mechanics.
- II. { Tacitus; The History; Manners of the Germans; and
Agricola.
Græca Majora, continued.
Natural Philosophy, finished and reviewed.
- III. { Astronomy.
Hedge's Logic.
Tytler's History.
Fluxions.
Homer's Iliad. } *At the option of the student.*
Hebrew, French, or Spanish.

SENIOR CLASS.

- I. { Blair's Rhetoric.
Stewart's Philosophy of the Mind.
Brown's do.
Paley's Moral Philosophy.
Greek and Latin.
- II. { Paley's Natural Theology.
Evidences of Christianity.
Greek and Latin.
- III. Say's Political Economy.

In addition to the recitations in the books here specified, the classes receive lectures and occasional instruction from the professor of languages; the junior class attends a course of experimental lectures on natural philosophy; and the senior class the courses on chemistry, mineralogy, geology, and select subjects of natural philosophy and astronomy. The members of the several classes attend also the private exercises and lectures of the professor of rhetoric and oratory. A course of lectures on the Oration of Demosthenes for the Crown, is delivered to members of the senior class. Specimens of English composition are exhibited daily by one or more of each of the divisions of the sophomore and junior classes. Written translations from Latin authors are presented by the freshman class. The lower classes are also instructed in Latin composition. The senior and junior classes have forensic disputations once or twice a week, before their instructors. There are very frequent exercises in declamation before the tutors, before the professor of oratory, and before the faculty and students in the chapel.

Gentlemen well qualified to teach the French and Spanish languages are engaged by the faculty, to give instruction in these branches to those students who desire it, at their own expense.

The object of the system of instruction to the undergraduates in the college is not to give a partial education, consisting of a few branches only; nor, on the other hand, to give a superficial education, containing a little of almost every thing; nor to finish the details of either a professional or practical education; but to commence a thorough course, and to carry it as far as the time of the student's residence here will allow. It is intended to maintain such a proportion between the different branches of literature and science, as to form a proper *symmetry* and *balance* of character. In laying the foundation of a thorough education, it is necessary that *all* the important faculties be brought into exercise. When certain

intention of these institutions is to give a thorough education both in languages, mathematics, and the sciences; and there is no reason to doubt that any

mental endowments receive a much higher culture than others, there is a distortion in the intellectual character. The powers of the mind are not developed in their fairest proportions by studying languages alone, or mathematics alone, or natural or political science alone. The object, in the proper collegiate department, is not to teach that which is peculiar to any one of the *professions*; but to lay the foundation which is common to them all. There are separate schools of medicine, law, and theology, connected with the college, as well as in various parts of the country, which are open to all who are prepared to enter on professional studies. With these, the undergraduate course is not intended to interfere. It contains those subjects only which ought to be understood by every one who aims at a thorough education. The principles of science and literature are the common foundation of all high intellectual attainments. They give that furniture, and discipline, and elevation of the mind, which are the best preparation for the study of a profession, or of the operations which are peculiar to the higher mercantile, manufacturing, or agricultural establishments.

There are two public examinations of the classes in a year,—one in May, the other in September,—which are continued from four to six days each. The candidates for degrees are also examined at the close of their course of study.

There are three vacations in a year; one of six weeks, beginning at commencement, the second Wednesday in September; the second, two weeks from the second Wednesday in January; and the third, four weeks from the first Wednesday in May. No student is allowed to be absent, without special leave, except in vacations. The absence of a student in term time, even for a few days, occasions a much greater injury to his education than is commonly supposed by parents and guardians.

Public Worship.—Prayers are attended in the college chapel every morning and evening, with the reading of the Scriptures, when one of the faculty officiates, and all the students are required to be present. They are also required to attend public worship in the chapel on the Sabbath, except such as have permission to attend the episcopal, or other congregations in town.

Expenses.—The college bills are made out by the treasurer and steward three times a year, at the close of each term, and are presented to the students, who are required to present them to their parents, guardians, or patrons. If any student fails to comply with this requisition, he is not permitted to recite till the bills are paid.

The annual charges in the treasurer's bill are,

	Dolls.	Cts.
For instruction	33	00
For rent of chamber in college, from 6 to 12 dollars— average	9	00
For ordinary repairs and contingencies	2	40
For general damages, sweeping, &c., about	3	30
For wood, for recitation-rooms, about	1	30
Total	49	00

Besides this, the student may be charged for damages done by himself, and a small sum for printing catalogues, and other occasional expenses.

Board is furnished in commons by the steward, at cost, about 1 dollar 60 cents a week, or 64 dollars a year, not including vacations. It varies, however, with the price of provisions. Wood is procured by the corporation, and distributed to those students who apply for it, at cost and charges.

The students provide for themselves bed and bedding, furniture for their rooms, candles, books, stationery, and washing. There are also, in the several classes, taxes of a small amount, for the fuel in the recitation-rooms, catalogues, &c. If books and furniture are sold, when the student has no further necessity for them, the expense incurred by their use will not be great.

The following may be considered as a near estimate of the ac-

students who remain, and diligently apply themselves, during the full term, may attain the object proposed. It is admitted, nevertheless, that a large proportion leave college for the busy and interesting concerns of life, before they have allowed themselves sufficient time to become thoroughly grounded. It may be doubted, however, how many individuals in England would condemn themselves to spend the fairest portion of their lives in celibacy, were they not amply supplied, by means of endowments, with the luxuries of life, and beguiled by a prospect of liberty and a good living at the death of some worthy consumer of the tithe. Contrasting the university system of Great Britain, under which many individuals are justly said "to spend their lives in polishing a key, without ever unlocking a door," with the less wealthy colleges of America; and keeping in view their moral, as well as literary character, the superiority of the former may be viewed without envy by a people, who in their literary, as well as in their financial pursuits, have as few beggars as they have monopolists.

cessary expenses, without including apparel, pocket-money, traveling, and board in vacations:

	Dollars.
Treasurer's bill, as above	49 49
Board in commons, 40 weeks, from	60 to 70
Fuel and light	8 16
Use of books recited, and stationery	5 15
Use of furniture, bed, and bedding	5 15
Washing	6 18
Taxes in the classes, &c.	5 7
Total	140 to 190

No students are permitted to take lodgings in town, except when the rooms in college are not sufficient to accommodate all.

Students who wait in the hall are allowed their board; and those who occupy the recitation-rooms save their room-rent and fuel in winter, and receive a small compensation in summer. A cheap boarding-house is opened, under the direction of the steward, for those students who wish to board at a lower rate than it is furnished in commons. The price of board here is about 1 dollar 25 cents.

By a resolve of the corporation, a sum not exceeding one thousand dollars a year is appropriated to the relief of indigent students, and the encouragement of merit.

The Theological Department.—The instructors in the theological department are a professor of didactic theology, a professor of sacred literature, and the professors of divinity and of rhetoric in the classical department of the college.—The whole course of instruction occupies three years; and the students are divided into junior, middle, and senior classes.—The time of admission is at the commencement of the first collegiate term. The terms and vacations are the same with those in the college. The conditions for entrance are hopeful piety, and a liberal education at some college, unless the candidate have otherwise qualified himself for pursuing advantageously the prescribed course of studies.—No charges are made for the tuition and lectures.—No funds have as yet been granted to this department for defraying the expenses of indigent students.—Board may be obtained in private families at from 1 dollar 25 cents to 1 dollar 75 cents per week.

The Law School.—The Law School is under the direction of the Hon. David Daggett, LL. D., a judge in the supreme court in Connecticut, and professor of law; and Samuel J. Hitchcock, Esq., at-

Having thus briefly noticed the machinery of education in the United States, we shall make a few observations on its results, which will be found to correspond with the character of their causes. We commence with what, with few exceptions, may be termed the lowest kind. Newspaper literature has attained a universality unparalleled in the annals of the art of printing, and leaving, in point of quantity at least, the parent country far behind. There are published in the United States nearly 1,000 newspapers: a large number of them daily, and some of them of very extensive circulation: many of them are entirely political; and certainly we cannot commend their style of conducting their warfare—they appear to mistake virulence for talent: others are purely commercial, filled with advertisements, at the rate of four insertions for a dollar. Some are devoted chiefly to literary and scientific purposes; many of these are highly respectable. A considerable number, some of them of a very large circulation, (the New York Christian Advocate and Journal, and New York

torney and counsellor at law.—The students are required to peruse the most important elementary treatises, and are daily examined on the author they are reading, and receive at the same time explanations and illustrations of the subject they are studying.—A course of lectures is delivered by the professor of law, on all the titles and subjects of common and statute law.—A moot court is holden once a week, or oftener, which employs the students in drawing pleadings and investigating and arguing questions of law.—The students are called upon from time to time to draw declarations, pleadings, contracts, and other instruments connected with the practice of law, and to do the most important duties of an attorney's clerk.—They are occasionally required to write disquisitions on some topic of law, and collect the authorities to support their opinions.—The students are furnished with the use of the elementary books, and have access, at all times, to the college libraries, and to a law library, comprising every important work, both ancient and modern.—The terms for tuition are 75 dollars per annum. The course of study occupies two years, allowing eight weeks' vacation each year. Students are, however, received for a shorter period.—The professor of law will also, for the present, occasionally deliver lectures to the senior class in college, until arrangements are made for a systematic course to be permanently continued.

The Medical Institution.—The instructors of the Medical Institution are, a professor of surgery and obstetrics, a professor of chemistry and pharmacy, a professor of the theory and practice of physic, a professor of materia medica, botany, and therapeutics, and a professor of anatomy and physiology.—The lectures commence the last week in October, and terminate the last week in February. During the course, from fifty to one hundred lectures are given by each professor.—The students have access to the lectures on natural philosophy on paying the fees of the course, and they may attend the lectures on mineralogy and geology without charge. The examination for licenses and degrees is held immediately after the close of the lectures.—The institution is furnished with a library and an anatomical museum. The students have access also to the library of the college, and to the cabinet of minerals.—The fees, which are paid in advance, are twelve dollars and fifty cents for each course. The matriculation fee and contingent bill are seven dollars and fifty cents. The entire expense of a residence of four months, through the course, including fees and all expenses, except clothing, is from 120 to 150 dollars.

Observer, for instance, the former having 30,000, and the latter 14,000 subscribers,) are religious newspapers—a class that has never yet maintained its ground in England, although blessed with a “national religion.” There is also another class of newspapers, very different from any in this country—weekly registers of facts connected with trade, commerce, internal improvements, mechanical inventions, as well as the proceedings of congress and the state legislatures—such are Niles’s Register and Hazard’s Pennsylvania Register. We apprehend they cannot exist in this country unless the stamp duty were abolished, as they combine many of the features of a newspaper with those of a mechanic and scientific magazine.

The present state of the monthly and quarterly publications indicates a rapid improvement in the taste of the American public. Several attempts were made, some years since, to establish an American Review; but the North American has been the first that has maintained its ground; and from its progressive improvement, it has well deserved the honour. It is now become almost as well known in Europe as the Edinburgh or Quarterly; and some of its articles on European politics are read with a *biting* interest. Two other American Reviews, the Quarterly and the Southern, both very ably conducted, are also published quarterly. In the field of science, Silliman’s Journal, published quarterly at New Haven, is well known, and deservedly esteemed. The American Monthly Review, recently established, gives short notices of all new works which issue from the press, either in Europe or America. The New England Magazine, though inferior, is somewhat in the style of our New Monthly. Several other literary periodicals are published in Boston, New York, and Philadelphia; and even the new states in the west are not wholly destitute of periodical literature. Theological periodicals are very numerous; and some of them contain very able critical disquisitions on biblical literature, as well as controversial pieces. The Christian Examiner, and the Unitarian Advocate, published at Boston, are the organs of Unitarianism. The Christian Spectator, published at New Haven, is the advocate of orthodoxy. The Theological and Critical Repository, published at Andover, conducted by Professor Robinson and Dr. Moses Stuart, is perhaps one of the ablest critical works in biblical literature that has ever appeared in the English language. The Baptists, Methodists, Episcopalians, Swedenborgians, Universalists, and other sects, have each one or more periodicals. It might seem impossible that such variety should exist without inducing universal freedom of thought; but this result may

be, and to a very large extent is, avoided, by the very simple process of each sect carefully excluding every other publication but its own, for the very sufficient reason that it is the only one which either does or can contain the truth—a reason perfectly similar in its principle to that which induced the Turk to order the destruction of the Alexandrian library.

The principal annual works which issue from the American press are the American Almanac, a most admirable publication, and the Annual Register, which improves every year, both as to matter and arrangement. The pictorial annuals certainly exhibit no advanced state of the arts either of painting or engraving; and, indeed, are more discreditable in the former point than in the latter: for most of the designs are taken from English prints, and this (unless the taste of the American people is founded upon the principle that a painter is to have “no honour in his own country”) most unnecessarily, as the scenery of the Hudson, the Potomac, and the Ohio, not to mention a thousand other streams, and the pencils of Cole and other American artists, would produce as interesting an annual, at any rate, as borrowed prints, which as invasions of copyright, render the works not only unpalatable, but unsaleable in Great Britain.

With respect to original works on general literature, if America has less to boast than Europe, she has still less to be ashamed of. If her genius has not been employed to enliven the fancy, neither is it devoted to the pollution of the heart. But the writings of Irving and Cooper have forced their way through the prejudice which exists against the productions of our former colonies, and are too well known and too highly esteemed to permit any encomium from our pen, without a violation of propriety. It is true that their chief writers have sought the richer reward which the European market affords; but the genius is no less American because exercised on this side the Atlantic, nor must our readers suppose that the claims of America to literary merit rest on two or three names alone. If a lucid and manly style is worthy of commendation, that of Franklin, and of Washington, has rarely been surpassed; if eloquence be a mark of genius, Henry Lee, Patrick Henry, and others, may well lay claim to the wreath of fame.

We are somewhat surprised to find the dramatic writings of the Americans to be so numerous. The editor of the American Quarterly states, that “he has actually in his possession nearly sixty American dramas, consisting of tragedies, comedies, operas, melo-dramas, and farces;” and he adds, that after a duly diligent perusal of them, he can venture to affirm

that "they are quite equal to the productions of the present race of London playwrights which are regularly brought out at our theatres, and to which the certificate of having been performed a hundred nights, with unbounded applause, gives all the efficacy of a quack medicine." Nor have the Americans been destitute of poetic efforts; not to mention living poets, Hopkins, Dwight, Barlow, Humphreys, Hopkinson, Trumbull, Freneau, Sewell, Linn, Lathrop, Paine, Prentiss, Boyd, Clifton, Isaac Story, Allan, Osborn, Spense, Brainerd and Drake, have contributed many powerful and even refined effusions of the poetic muse. It would, however, occupy a volume to give a brief account of American writers; and it is a work which we hope will be taken up by some able pen, that the ignorance which exists on this subject may, at least, be left without excuse.

We shall close our remarks on American literature with some very just observations by a recent American writer,* which place in a correct point of view the causes which have hitherto operated to retard the progress of literary refinement in the United States, while they at the same time vindicate the mental elements of their national character. "The American intellect possessing great compass, strength, and flexibility, united to a clear perception of fitness, is equal to any exigency in human affairs, and can adapt its pursuits to every change that may occur, and its measures to every new demand that may be made on it. This is attested by the great improvements it has made in every branch of knowledge that is called for in the country, and by which an honourable independence can be gained. Our position to this effect might be confirmed by a reference to the elevated condition of the liberal professions among us, and the multitude of inventions in the mechanical arts. Knowledge on these subjects, being needed in the present state of society, can be rendered profitable to its possessors, by an immediate application of it to practical purposes. It is therefore eagerly sought after, and rapidly attained. And the same will be true of every other branch of knowledge, as soon as it shall be called for under the certainty of a suitable reward. No matter whether it belongs to science, arts, or letters; let a market for it be opened, and American genius will soon supply it. But little has been hitherto done by the public to encourage American literature. It has been even discountenanced, by an unreasonable preference of that from abroad. We call the preference unreasonable,

because the foreign articles preferred have been often inferior to the domestic ones that were undervalued. The consequence has been what every one who reflected on the subject anticipated. Polite literature has been comparatively but little cultivated among us, except as a matter of individual taste and amusement. We have had but few writers by profession, because neither honour nor riches awaited the pursuit. Our mechanics became wealthy by labouring in their vocations, while our scholars might have starved in the midst of the most exquisite productions of their pens. The reason is obvious. There was a great demand for the implements of agriculture and some of the arts, but a very limited one for poetry, or any other kind of fine writing. The former was adapted to the state of society, while the latter was out of time. Necessaries and comforts, not luxuries or mere delicacies, were first to be provided. But polite literature is a luxury, and will not therefore be encouraged, because it cannot be indulged in, except as a concomitant of wealth and leisure. During this condition of things, but few literary productions appeared; and even those that did appear were not of the highest order, or in the most finished style, because they had not been sufficiently elaborated: and to become a good writer is the work of years, under close industry, and the strictest attention to style and manner. Such was the disheartening state of things: yet it has already appeared that, notwithstanding its power to blight and wither, it did not render American genius unproductive. Beneath gloom and winter the blossoms opened, and the fruit became mature and excellent, far beyond what there was ground to expect. But of late, the sentiments of society have changed, public taste and judgment are improved, and a new era is evidently opening on American literature. Foreign productions are not, as formerly, almost indiscriminately approved, nor those of our own writers rejected, merely because they are not the growth of a distant hemisphere. Readers examine and reflect, before they feel themselves authorized to decide. Their decision, therefore, is founded on principle, and is usually correct. As the consequence of this change in public feeling, American works are sought for and purchased to a much greater extent than in former years. Let this state of things continue; or rather, let it improve in the requisite degree; let fine specimens of American composition be rewarded with honour and profit, and they will soon be abundantly produced. Let prompt and liberal purchasers be found, and the market, as in other cases, will be well supplied. The Souvenirs, Tokens,

* New England Magazine, vol. i. p. 479.

and novels of the day, with many other productions of taste, give proof of this. We do not say that Byrons, and Sir Walters, and Moores, will immediately spring up among us. Authors of that class appear but seldom. But we do say that we shall soon have writers equal to any Europe contains, except, perhaps, such prodigies as we have named; and in time we shall equal them. The same genius that gave renown to our fathers, through all the eventful periods of our history, is still the cherished inheritance of their descendants."

The progress of the arts in the United States has been in proportion to their bearing on the essential comforts of life. Thus, in the mechanical arts they are inferior to no nation of the globe, as their ships, steamboats, and engines of all kinds, bridges, canals, and rail-roads, abundantly testify. Architecture has recently received a far greater portion of attention than formerly; those who devote their attention to this subject generally making the tour of Europe, to inform their minds and cultivate their taste. Many of their recent state-houses and churches indicate the improved condition of the art, and afford just ground for pleasing anticipations of the future. We cannot give our readers a better idea of the domestic architecture of a respectable house in the cities of the United States, than by quoting the description which Mr. Cooper has given of a habitation of an American in the very best society, who is in easy circumstances, of extensive and high connexions. "The house in question occupies, I should think, a front of about thirty-four feet on the Broadway, and extends into the rear between sixty and seventy more. There are no additions, the building ascending from the ground to its attics in the same proportions. The exterior necessarily presents a narrow, ill-arranged facade, that puts architectural beauty a good deal at defiance. The most that can be done with such a front, is to abstain from inappropriate ornament, and to aim at such an effect as shall convey a proper idea of the more substantial comforts and of the neatness that predominate within. The building is of bricks, painted and lined, and modestly ornamented, in a very good taste, with caps, sills, cornices, &c. in the dark red freestone of the country. The house is of four stories; the lower, or *rez de chaussee*, being half sunk, as is very usual, below the surface of the ground, and the three upper possessing elevations well proportioned to the height of the edifice. The door is at one of the corners of the front, and is nearly on a level with the windows of the first floor, which may commence at the distance of about a dozen feet above the pavement of the street. To reach

this door, it is necessary to mount a flight of steep, inconvenient steps, also in freestone, which compensate, in a slight degree, for the pain of the ascent, by their admirable neatness, and the perfect order of their iron rails and glittering brass ornaments. The entrance is into a little vestibule, which may be some twelve feet long by eight in width. This apartment is entirely unfurnished, and appears only constructed to shelter visitors while the servant is approaching to admit them through the inner door. From the vestibule, the entrance is into a long, narrow, high, and handsome corridor, at the farther extremity of which are the principal stairs. This corridor, or passage, as it is called here, is carpeted, lighted with a handsome lamp, has a table and a few chairs; and, in short, is just as unlike a French corridor as any thing of the sort can very well be. From this passage you enter the rooms on the first floor; you ascend to the upper, and descend to the lower story, and you have egress from and ingress to the house by its front and rear. The first floor is occupied by two rooms that communicate by double doors. These apartments are of nearly equal size, and, subtracting the space occupied by the passage, and two little china closets that partially separate them, they cover the whole area of the house. Each room is lighted by two windows; is sufficiently high; has stuccoed ceiling, and cornices in white; hangings of light, airy, French paper; curtains in silk and in muslin; mantel-pieces of carved figures in white marble; Brussels carpets; large mirrors; chairs, sofas, and tables, in mahogany; chandeliers; beautiful, neat, and highly-wrought grates in the fire-places, of home work; candelabras, lustres, &c., much as one sees them all over Europe. In one of the rooms, however, is a spacious, heavy, ill looking side-board, in mahogany, groaning with plate, knife and spoon cases, all handsome enough, I allow, but sadly out of place where they are seen. You ascend, by means of the stairs at the end of the passage, into what is here called the second story, but which, from the equivocal character of the basement, it is difficult to name correctly. This ascent is necessarily narrow, crowded, and inconvenient. The beautiful railings in mahogany and brass, and the admirable neatness of every part of an American house of any pretension, would serve to reconcile one to a thousand defects. As respects this cardinal point, I think there is little difference between the English and the Americans, at least, so far as I have yet seen the latter; but the glorious sun of this climate illumines every thing to such a degree as to lend a quality of brightness that is rarely known in Britain. On the second

floor, (or perhaps you will get a better idea if I call it the first) of the house of Mr. —, there is a spacious saloon, which occupies the whole width of the building, and possesses a corresponding breadth. This apartment, being exclusively that of the mistress

f the mansion, is furnished with rather more delicacy than those below. The curtains are in blue India damask, the chairs and sofa of the same coloured silk, and other things are made to correspond. The library of the husband is on the same floor, and between the two is a room which is used as a bed-chamber. The third story is appropriated to the sleeping-rooms of the family; the attic to the same purpose for the servants; and the basement contains a nursery and the usual offices. The whole building is finished with great neatness, and with a solidity and accuracy of workmanship that it is rare to meet with in Europe, out of England. The doors of the better rooms are of massive mahogany; and wherever wood is employed, it is used with great taste and skill. All the mantel-pieces are marble, all the floors are carpeted, and all the walls are finished in a firm, smooth cement.*

Of the fine arts, the Americans have been less deficient in painting than any other; and, we apprehend, but few years comparatively will transpire before they attain a high character in this respect. Symbert, who went out with Dean Berkeley, in 1728, was decidedly a man of genius, though a self taught artist. He settled in Boston, where he was highly esteemed. His head of Cardinal Bentivilio, and of Dr. Mayhew, are among the first of fine portraits. Copley, the father of Lord Lyndhurst, the late lord-chancellor, appears to have been a pupil of Symbert, and flourished at Boston after Symbert's death. At the period of the revolution, after the battle of Lexington, he left America for England, where he had the good fortune to be as acceptable as he had been in his native country. Sir Benjamin West was a native of America, and first discovered his genius there. His talents are too well known to require our comment. Among the most distinguished American painters must be ranked Gilbert Stuart; he was a native of Rhode Island, and, after leaving college, made up his mind to follow painting as a profession; and not being able to find a proper master in America, Copley being then gone to England, he embarked for this country, in 1775, and put himself under the instruction of Mr. West, who was then in the zenith of his fame. Stuart soon became a favourite pupil of his master, and graduated from his school with a high

reputation as a portrait painter: he ranked second to no one in London, but Sir Joshua Reynolds. While in the metropolis, he had the good fortune to become acquainted with Burke, Fox, Sheridan, and many of their associates. These men were not only patrons of the arts, but the friends of artists. He painted several of them in a fine style, which spread his fame far and wide. They were anxious to possess and to give to the world a correct likeness of Washington, and they induced Stuart to visit the United States for that purpose. When he arrived at the city of Washington, the great man had retired from all office, and was in private life at Mount Vernon. When he sat to Stuart, as the latter has often stated, an apathy seemed to seize him, and a vacuity spread over his countenance, most appalling to the painter. Stuart was, however, not easily overcome; he made several fruitless attempts to awaken the heroic spirit in him, by talking of battles, but in vain. He next tried to warm up the patriot and sage, by turning the conversation to the republican ages of antiquity;—this was equally unsuccessful. At length the painter struck on the master-key, and opened a way to his mind, which he has so happily transferred to the canvass with the features of his face. In the whole of this picture, in every limb, as well as feature, the martial air of the warrior chief is admirably mingled with the dignity and majesty of the statesman and sage. Stuart tarried a year or two in the city of Washington, and, during that time, painted John Adams, Thomas Jefferson, Mr. Madison, and many other distinguished men of America. He removed from Washington to Philadelphia, which was then greatly in advance of the other cities and great towns in the United States, in every branch of the fine arts. Here, too, he was a favourite in society, as well as in his profession. His next remove was to Boston, where he resided during the remainder of his life. For several years after his coming to Boston, he was overwhelmed with business: many had to wait months for an opportunity of sitting to him; and, even in his latter years, he frequently had more calls than he could answer.

Colonel John Trumbull, who is now living, was the contemporary of Stuart and Johnson, an acquaintance of Copley's, and a student with West. His life has been more full of incident than those of his brother artists, for he has been soldier, politician, and traveller, as well as painter. In him the love of his art was early developed; it began in the nursery: before he was prepared to enter college, he had painted several pictures; and while at Cambridge, in his leisure moments, he indulged himself in painting. Some of these efforts, before he had received a

* *Notions of the Americans* vol. i. p. 194—199.
Vol. II.—Nos. 29 & 30.

single lesson, were seen by Copley, who bestowed upon them a cordial smile of approbation. He then had but a faint expectation of making the art his main pursuit, and he subsequently entered on a military career; and, in the fall of 1776, he was appointed adjutant-general of the northern army. While in this office, he thought himself superseded, which his pride could not brook; and he resigned his commission, and returned to his native state. Having determined to become an artist, he made his way to England, to place himself under the guidance and instruction of his countryman, Mr. West, then at the head of painters in England. He had sheathed his sword, and shut his ears to all political strife, and was advancing his knowledge in the bosom of the arts, when, on the British ministry learning the fate of the unfortunate Andre, in 1780, he was seized and imprisoned in the tower, on the ground of being an American officer of the same rank as Andre; and, for some time, his life was considered in danger. During his imprisonment, Fox, Burke, and the leaders of the opposition, often visited him. At length Trumbull was released on bail; but an order instantly followed for his departure forthwith. He went to France, and from thence returned to America. During this difficulty, West was the warm and unshaken friend of his pupil, and proved to him that his virtues were as exalted as his talents, that his heart was as true and steady as his hand. Colonel Trumbull returned to England after the peace of 1783, and was most warmly received by his old friends, and patronized by them in his profession. During this visit he painted the *Sortie of Gibraltar*—a production which Horace Walpole pronounced the best that had ever been executed on this side the Alps. After his return to America, he was employed in painting the four historical pieces which adorn the capitol: the subjects are—The Declaration of Independence, the Surrender of Burgoyne, the Taking of Cornwallis, and Washington resigning his Commission. It is much to be regretted, that the pencil of this veteran has not been employed to perpetuate other signal events of the illustrious struggle of the Americans for Independence.*

Several institutions have been formed for the encouragement of the arts. One of them, the National Academy of Design, in New York, has furnished opportunity for some very judicious remarks in the *North American Review*. The editor resents the charge brought by one of the advocates of the institution, Mr. Morse, that the Americans are ne-

glectful of their own artists, and observes, that the only way in which a correct taste can be formed is, by placing a due value on the productions of the old masters, as well as on the productions of other countries. The writer adds, "That our country will equal the contemporaneous works of others, we are well inclined to believe, though we cannot but see in our peculiar situation peculiar disadvantages. But we can hardly hope that the masterpieces of ancient art are ever to be surpassed, here or in Europe. The forms and occupations of society are growing every day less favourable to the highest efforts of the imagination. We live in an age of utility. Every thing which tends directly to improve the physical condition of man, and to develop his reasoning and active powers, is cultivated with zeal and success. The most stubborn obstacles of nature are yielding to new and tremendous enginery. What were her impassable barriers, have become highways; and the fabled works of the giants are surpassed by the power of knowledge. Education is sent abroad into all classes of men, to make them feel their strength and use their reason. All this renders the world populous, prosperous, and happy; but it is at the expense of much that we love, and much that elevates and refines the feelings. In this cultivation of the reason, the imagination loses its power. Eloquence, poetry, painting, and sculpture, do not belong to such an age; they are already declining, and they must give way before the progress of popular education, science, and the useful arts. It may be, that when the great work about which the world is now occupied is accomplished, a new school of art, of proportionate grandeur, may arise; but we fear that its best days are past. We cannot but rejoice at this progress of society; still we must wish that the good it brings might be purchased without so great a sacrifice. We would not withhold the light of knowledge for fear it should dissipate the most poetical phantoms of the imagination; but we may be allowed to look back on their old haunts, laid open to the vulgar day, with some feelings of regret."†

An addition of some extent would embrace but a partial notice of a few of the more prominent works which Americans have produced, on the respective branches of law, physic, and divinity. The reputation which the United States enjoy for their successful efforts in establishing a republican form of government, embracing the inestimable privileges of civil and religious rights, independently of that derived from the valour of arms, has not been effected without the

* Knapp's Lectures on American Literature.

† *North American Review*, vol. xxvi. p. 218.

principles of legislation having been investigated with much talents and acumen, and by the publication of numerous-works, many of them of standard value, for the benefit of the present and after ages. The mere enumeration of the intellectual products of American minds, on the science of government and legislation, would occupy a considerable space: and a remark of a like import might be made in relation to the various evidences which have been given by indigenous writers on morals and religion, as well as on the science of the healing art. The editor is induced to transfer to these pages a portion of his observations made on a former occasion, on the subject of American literature, with such additions as he deems sufficiently appropriate at this time.*

"American literature seems to be but imperfectly understood abroad—but when the subject is fully examined it will be found that there have been many excellent writers in this country on many subjects of deep interest to the community. Literature had been cherished in England for the best part of a century before the American colonies were planted, or before they arrived to any consideration, and the planters had no small share of it, especially that part of learning which related to theology and biblical criticism.—The puritan divines were deeply read in the humanities, and when the yoke of Rome was thrown off, they prepared themselves to defend their opinions with all the learning of the East. When these men, and those under their clerical guidance, came to this country, they brought all the books necessary to defend themselves, and the faith they professed, and instruct succeeding generations. Those who did come to this new world for conscience's sake, were among the most enterprising men of the mother country. In 1606, the Virginia settlement began. The next was commenced by the Dutch, on Hudson's river. Smith, the leader of the Virginian colony, was a man of high acquirements and accomplishments. He wrote a minute account of all he saw and examined, and of course must be considered as having commenced the literature of the country. He published, in 1608, his sixth voyage to Virginia; six years afterwards, his first voyage to New England; and the next year, his second voyage to the same place; and in 1617, a description of the country. These were in addition to works he had previously published of his adventures in other countries.

"Among the pilgrims who came to Plymouth in 1620, there were many men of literary information.

The venerable Brewster, and his friend Carver, were both well educated, and the political compact drawn up before these pilgrims landed, is sufficient proof of their intelligence; and the correspondence this little band had with the settlers of New Amsterdam, only seven years after they had taken possession of New England, is corroborative of the fact. The letters from Governor Winslow to the Governor of New Amsterdam are written with acuteness and elegance. Several of his productions have come down to us and are much esteemed at the present time. One of his works is called *Good News from New England*.

"The colony established by Winthrop, and others, in Massachusetts, in 1630, contained several very learned men, both in law and divinity.—Winthrop was an intelligent lawyer. He kept a journal of his proceedings, and noted all the remarkable events as they happened. This work, after a variety of fortunes, has been given to the public, nearly or quite complete. Parts of the manuscript had been lost, which a few years since were accidentally found.

"Harvard college was established in 1636, and soon afterwards a printing press was set up in Cambridge. From this press issued many valuable works. The first book printed was the Freeman's Call; soon after this, an almanac; and the first political pamphlet was 'The Christian Commonwealth,' written by Elliot, *the apostle to the Indians*, who soon afterwards learned the language of the aborigines, and translated the Bible into their vernacular tongue, with parcels of several other books for religious instruction. This translation of the Bible must have been a work of prodigious labour.—There are a few copies of it now extant, and these are indeed great curiosities, for the very race it was meant to instruct have vanished from the face of the earth.

"Hooker, a divine who came to Boston, wrote many sermons, and a work on church discipline; and at the same period, Thomas Parker, a learned man, was engaged in the cause of literature, with James Noyes, his friend; they were publishers of several works on divinity. Some of Parker's works were on the controversial side.

"Mr. Thomas Shepherd, wrote on metaphysical subjects; such as '*the morality of the Sabbath*,' '*New England's lamentation for Old England's Errors*;' and likewise, '*An explanation of the parable of the ten virgins*.' This last work is said to abound in the philosophy of the heart, and has been the guide to many who have attempted an analysis of the affections and the passions. When Shepherd died, President Oakes delivered a eulogy

* See Volume II. Part V. Treasury of Knowledge, published by Conner & Cooke, New York.

in Latin, on his character. Shepherd had two sons, who were distinguished scholars.

"One of the best writers of that day was Nathaniel Ward. He was not only a man of versatile genius, but he had laboured in several professions, certainly in law and divinity. He wielded the pen of an accomplished satirist. He wrote '*the simple cobbler of Agawam*.' This was a satire upon the enemies of Charles I., and was full of causticity and wit. He also wrote the '*Body of the Liberties*.' This is a singular work, and perhaps contains more germs of the true and fundamental doctrines of liberty and law, than any work of its size in the world. There is not a feature of all our state and of our federal constitutions, but may be found in the '*Body of the Liberties*.'

"Peter Buckeley wrote Latin poetry; some scraps have been preserved. He wrote and published a celebrated theological work, entitled, '*The Covenant of Grace opened*.'

"Ezekiel Rogers, a clergyman of Rowley, preached the election sermon in 1643. This production was a most direct promulgation of democracy, as he advocated rotation in office, and urged the impropriety of choosing a governor for a second term. The people were then too wise to follow such advice; but it shows how much the whole mass were inclined to democracy, that such a sermon should have been tolerated.

"One of the most voluminous writers of that day, was John Cotton, mostly on subjects of divinity or church government. A catalogue of his works are given, merely to show how indefatigable the founders of our republic were in all their duties of enlightening the minds of the people; 'God's promise to his Plantation, an election sermon, 1634; a Letter in answer to objections made against the New England Churches, with the questions proposed to such as are admitted to Church Fellowship, 1641; The Way of Life, 4to; God's mercy mixed with his Justice; an Abstract of the Laws of New England, 1641, and a second edition in 1655;' this abstract of such laws of the Jews, as were supposed to be of perpetual obligation, was drawn up in 1636, when Vane was governor, though it was never accepted; it is preserved in volume 5, of his historical collections of Massachusetts: 'the Church's Resurrection, on the fifth and sixth verses of Revelation xx. 1642, a Modest and Clear answer to Mr. Ball's discourse on set forms of Prayer; Exposition of Revelation xvi.; the True Constitution of a particular visible church, 1643; the Keys of the Kingdom of Heaven, and power thereof, 1644; the Doctrine of the Church, to

which is committed the Keys of the Kingdom of Heaven; the Covenant of God's Free Grace most sweetly unfolded, to which is added a profession of faith, by Mr. Davenport, 1645—3d edition, 1671; the Way of the Churches of Christ in New England, or the Way of the Churches walking in brotherly equality, &c.; the pouring out of the Seven Vials the Controversy concerning liberty of Conscience truly stated, 1646; a Treatise showing that the Singing of Psalms is a good Gospel Ordinance, 1647; the Grounds and Ends of the Baptism of the Children of the Faithful, 1647; a Letter to Mr. Williams; the Bloody Tenet washed, and made white, by the Blood of the Lamb, being discussed and discharged of blood guiltiness by Just Defence, in answer to Mr. Williams, to which is added a reply to Mr. Williams' answer to Mr. Cotton's letter, 1647; Questions propounded to him by the teaching elders, with his answer to each question; the Way of Congregational Churches cleared, in two treatises against Mr. Baylie and Mr. Rutherford, 1648; of the Holiness of Church Members, proving that visible saints are the matter of the church, 1650; Christ the fountain of Life, 1651; a brief exposition of Ecclesiastes, 1654; his censure of the way of Mr. Hamden of Kent, 1656; Sermons on the first epistle of John, folio; a Discourse on things indifferent, proving that no church governors have power to impose indifferent things upon the consciences of men; Exposition of Canticles; Milk for Babes; a Catechism; Meat for Strong Men; a Discourse about civil government in a plantation, whose design is religion.' The foregoing works were probably all printed at the Cambridge press. We had made a catalogue of the works of this distinguished early writer, but after considerable research, found one far better made at our hands, by that learned, pious, and indefatigable biographer, Doctor Allen. Every scholar in that age wrote poetry; for they called all their productions poetry, that had been twisted out of the ordinary connexion of common prose;—but at this period, they had no good models of English versification, but Spenser; and they did not relish his use of antiquated words: however, there were some who had the soul of poetry in them.

Anne Bradstreet, who wrote a volume of poems, which were printed as early as 1642, was formed by nature for a poet. She was the wife and daughter of a governor, and was well educated. Her works were historical, metaphysical, and pious; she was as much praised in that day as any of the favourites of the muses are in our times by kind friends; and she had no fear of critics, for all the satire was reserved for polemic divinity in that day.

"Hooker, who came to this country with Cotton and Stone, was a distinguished writer, whose works made up a part of the literature of that age. He wrote a work on church discipline, and published a volume of sermons.

"John Norton was one of the great scholars of that early time; he wrote a Latin book in answer to certain questions put to him by the divines of Zealand, and many other works upon theological subjects, taking rank with Cotton and others of his school.

"While literature was cultivated, mathematics were not forgotten.—John Sherman delivered lectures on numbers, and on moral and political economy, as far as the science was then understood. He taught all who listened to him, how to make the best use of the means heaven had given them, both spiritual and temporal.

"Winthrop, governor of Connecticut, was son of the chief magistrate of Massachusetts, and a learned man; he was a philosopher.

"Roger Williams, who was the founder of Rhode Island, possessed more learning than he had credit for in those days, as his creed was objectionable to many; some of his poetry, and his vocabulary of the Indian language, have come to light of late years, which place him among the best bred scholars of that age.—He is the father of toleration in this country, which is praise enough for one man.

"Among the most gifted minds of early times was that of Ann Hutchinson, the wife of a respectable representative in the legislature from Boston. She was metaphysical and eloquent—she admired Cotton, and he had a great respect, as a man of intellect must always have, for a woman of such commanding talents.—She had meetings of women, and broached what the lords of creation thought new doctrines. There was a little touch of what is now called Swedenborgianism in her creed, for she asserted 'that believers are personally united with the spirit of God;' and perhaps she assumed a deeper look into futurity than most other women. All this was harmless enough, but not so for the grave divines of her time. They called a synod in 1637, the first ever called in America. This convention condemned eighty-two of her erroneous opinions; and the poor woman, for thinking deeper, and reasoning probably better, than her judges, was banished from Massachusetts. She was a fine spirited woman, and ought to have been made a teacher in the churches, instead of receiving a decree of banishment. She went to Rhode Island, 'the asylum of heretics,' the highest eulogy that ever was pronounced on any state. She lived there a few years, when her husband died, and

she removed to New York. In 1643, she, and the rest of her family, were slain by the Indians; this was considered by the superstitious as a just punishment for her numerous errors in religion. The Hon. James Savage, one of the first scholars of this country, is descended from Ann Hutchinson; and prides himself, no doubt, on his ancestry, for who would not be vain of having descended from such a gifted woman?

"Elliot had versified David's Psalms, which were unpopular; and Dunster, president of Harvard College, a ripe oriental scholar, attempted to revise them: it would have been better had he attempted to translate them altogether anew. This corrected version was at length superseded by that of Tate and Brady; which was in the next generation superseded by the fine version of Dr. Watts.

"The first tragedy written in America, was from the pen of Benjamin Coleman, while he was a student in Harvard College, entitled *Gustavas Vasa*, and was enacted at Harvard College at a regular commencement. He studied divinity, and was settled at Boston. He was eloquent and affectionate, and was called upon to pronounce the eulogies of most of the great men who died in his time. From his sermons, more than a hundred in number, many facts have been taken for the biographies of the 'illustrious men who were his predecessors.'

"Others were also distinguished as scholars, divines, and philosophers; but none more so than the Mathers, father and son. Increase, the elder, was president of Harvard College, was an agent for the colony in England, and wrote a great many excellent works. He was one of the chief labourers in the literary vineyard; and as such, was surpassed only by his son Cotton, the greatest prodigy of learning, of this, or of almost any other age or country. Cotton Mather was born in 1663, at which time the whole country was new, and the views even of the statesman and divine extended but little beyond the plantation, as a religious community, and before many had looked forward to the growth and power of the Colonies. Cotton Mather was the most voluminous writer that ever appeared in this country. The number of his works, according to one of his biographers, amounted to 383; many of them of considerable size. The *Magnalia* is the one now most often read. It contains a great portion of historical matter, and often serves for data to those who most violently abuse the author and his writings. A deep hatred against him, was fixed in the minds of many, at the course pursued in the affair of witchcraft in 1692, and previous. Mather was deceived, for he could not

have intended to do wrong, and has only the sin to answer for which lies at the door of many now-a-days, *'of forgetting, in their zeal to do good, the necessity of examining the means they use to effect their purpose.'*

"To Robert Calef, we owe much ; he was opposed to Mather's course, and came out boldly against it. His facts are clearly stated, and his reasons fairly given. The common sense of the people was awakened, and the whole delusion vanished, but not without a struggle on the part of the Mathers, and their friends.

"Michael Wigglesworth, was contemporary with Cotton Mather, but his senior.—He was an invalid most of his days, and his mind naturally turned on solemn subjects. As was not uncommon at that time, he acted in the double capacity of divine and physician to his flock. He was, for many years, confined to his house, and there he sought to do good by his poetry. He published a poem, called the Day of Doom ; it was a poetical description of the great and awful day of judgment. He also published a discourse on eternity, and several other short labours upon the solemn subjects of a change of worlds. Wigglesworth was a poet of no ordinary genius, and of extensive acquirements. His descendants, down to this day, have in every generation, been distinguished for talents and learning. There is a deep feeling in his Day of Doom, which only wants the skill of modern verse, to make greatly effective. The same thoughts, wrought up by Scott or Moore, would be admired.

"The first century of New England history was closing as the Mathers went down to the tomb. The scholars now in life had been educated at Harvard College, and all the statesmen and literati seemed to consider this their native land, which had not been the case for a great part of the first century. Connecticut now put in her claims for distinction. She had commenced a college, and could already boast of many intelligent men in every walk of life. Good Dean Berkeley, and others, had been roused by the reputation the colonies had acquired, in their short existence, and were desirous of having a share in the literature of the country.—Berkeley foresaw the coming glories of this country ; and though it was not in the nature of things for him to realize his anticipations, yet his visions were prophetic. What he waited for and expected in his day, came in due time, even in less than a century. He is not less a seer that foretels events, because he can not answer for times ; things are often disclosed when the hour of their advent is hidden : notwithstanding this, the

little poem by the Dean upon this country has been and still is considered a sort of prophecy.

"To this imperfect sketch of American writers on theology may be added a long list of divines who have sustained no small share of consideration, and exercised a wholesome and profitable influence by their respective publications, at a comparatively late day. The catalogue of sermon writers is indeed immense : a few of the most conspicuous of them are Provost Smith, of Pennsylvania ; Smith, of New Jersey ; Parsons, Tucker, Chauncey, Lathrop, Buckmaster, Channing, and Payson, of Massachusetts ; Seabury, Smalley, and Strong, of Connecticut ; Morse, Mason, Romaine, and Hobart, of New York ; Buist and Dehon, of South Carolina, &c.

"The literature of the United States has received several substantial contributions by G. C. Verplanck, Esq. Of these, his work on Revealed Religion is perhaps the first in importance. Polemical theology has had many expositors ; Edwards, Strong, Huntington, Linn, Mason, Miller, Whelpley, Howe, Bowden, McLeod, and Spring. A Search after Truth, by Dr. Beasley, must not be omitted.

"When William and Mary came to the throne of Great Britain, a new charter was given to Massachusetts, and war and conquest, in some measure, took the place of religious discussions. Sir William Phipps brought out lawyers with him, and some new books, which had an effect on the taste of the times. Public schools were now cherished ; commerce was engaged in ; and the whole people began to believe that they were destined for something more than a mere plantation for religious purposes. The people began to think that the press was intended for more than an instrument to make numerous copies of a book, and held it in the light of a security for the liberties they possessed.—Book printing had been known in Boston for many years before a newspaper was established. In 1636, books were printed, but it was not until 1704, that a newspaper was established. In 1686, there was a press set up in Philadelphia, and in seven years afterwards in New York—but pamphlet printing constituted the most of the business. The clergy were the great patrons of the press for the first century.

"The News Letter was published at Boston in 1704, and continued for the space of seventy-two years, until after the commencement of the war of the revolution. The Boston Gazette was next established, and the third was the New England Courant, by the elder brother of Benjamin Franklin, and in which that great philosopher was engaged as an apprentice. The first paper published in Philadel

phia was issued in 1719, and the first in New York in 1725.

"Among the most valuable writers of this country was Thomas Prince, the chronologist; he was a fine scholar, deeply read in civil, military, and ecclesiastical history. He travelled, became an excellent oriental scholar, and returned home fraught with all the collected wisdom of the old world, and at once set about doing something for the honour of his native land. He was the first who gave an account of the *Aurora Borealis* in this country. This phenomenon was seen by most with superstitious dread; but he met it upon sound principles of natural philosophy, and calmed the fears of the public. His productions are numerous, and are all marked with great good sense; but his chronology is the most esteemed of all his works, for its profound research. It is to be lamented that he did not bring his work down to more modern times. He spent too much time on the fabulous or doubtful parts of history to finish a table of the minute events of his own times. His labours should be continued by some of his countrymen, for there are ample materials for such a work; but perhaps whoever would undertake the task, would find himself but ill-paid for his trouble, and mortified as Prince was, at its slow sale; for while the public were praising the work, the writer was left to pay the printer. It is often to be regretted, that the book which the learned admire and extol, finds, perhaps, but few purchasers.

"Benjamin Franklin was born in 1706, and while a youth, was distinguished for his talents. He marked out a new path for himself. His essays were plain, and so full of good sense, that he became at once a popular writer. In 1732, he began his *Poor Richard's Almanac*, which abounded in such aphorisms and sayings as would attract all tastes and were useful for all conditions.—He then became a political writer, and was the first to gather a sufficient body of statistics to form correct opinions, and probably was the best informed man on general colonial subjects in the country. He next made many experiments in electricity, for the safety of human life. He also suggested a plan of union and defence for the colonies. His whole life was one long day of mental efforts, and his writings have an influence on this enlightened age.

"David Mason, a pupil of Franklin, in a few years after the philosopher's experiments in electricity, gave lectures upon the science, and excited the wonder of the people at the phenomena he exhibited by his machine. He was also acquainted with the science of chemistry, as it was then known in Europe; and

was called by the legislature of Massachusetts to teach the art of making gunpowder.

"From the first settlement of the country, the almanacs had exhibited a sufficiency of science for their general purposes, and oftentimes much more; and the literary information they contained was profitable and widely diffused.

"Doctor William Douglas wrote a summary account of the colonies, and something on botany, statistics, and political economy.

"Paul Dudley was the first in this country who turned his attention to natural history, and some of his papers are specimens of fine writing.

"Mark Catesby's works at this time became known. He travelled through Virginia and South Carolina; both of which abounded in plants, animals, and eminent materials for a naturalist. He returned to Europe, and procured assistance in getting out his work; a production which has much assisted our botanists in later times.

"The science of mind had now begun to call forth the attention of the ablest men in this country. Polemic divinity had lost some of its popularity, and new paths of learning were to be explored. Among the most distinguished of these philosophers, was Jonathan Edwards, who wrote on the "*Freedom of the Will*." This work has received the highest encomiums from those great men of Europe, who have made metaphysics a study.—Sir James Mackintosh, in the last labour of his mind, spoke of Edwards with profound respect. The works of our metaphysician have been published in eight octavo volumes, of large size, and, to the credit of the country, sold well. His son was quite as profound in the science as his father, and his style more clear and attractive; but the second in any pathway, has generally less fame than the leader.

"In 1763, the subject of introducing bishops into America, brought forward some of its best writers, among whom was Abthorp, rector of the episcopal church in Cambridge. It was a harmless affair in itself, but was made, from fears of the orthodox puritans, a matter of moment. Seabury, Johnson, Chauncey, and Mayhew, all engaged in the controversy, and displayed no ordinary talents. In Mayhew's productions there was much energy and bold freedom of political remark. He discovered no partiality for Saint Charles I., and refused to put him upon the calendar of the pious army of martyrs, although it was certain that he died after the manner of them. Doctor Mayhew was one of those men who enter so deeply into the affairs of their professional duties, that they forget how much is justly due to their anti

mal nature—and wore himself fairly out, before he had reached the best age of mental labour. He died at the age of forty-six, of a nervous fever, brought on by excessive study.

“Several institutions of learning had been founded, and were in a state of *hopeful experiment*, besides the college at Cambridge. Yale college was in a thriving condition long before the period to which we have brought down our cursory remarks upon American literature ;—and the college at Providence, (now Brown University, and under excellent auspices,) had connected with it some fine scholars. Nassau Hall had been founded, and a circle of learned men were soon brought from its walls—the Burrs and the Edwardses are among them. Columbia College, (then King’s College,) had gone into operation before some of those we have mentioned ; as also Dartmouth College, and all were doing well. There was now something fixed and settled, as it regarded future operations in the arts and sciences. At this juncture the revolutionary troubles came on—but there were mighty minds harnessed for the hour of battle. The mental resources of the country had been collecting for the crisis ; and all were fearless in the cause. We pause a moment, to show who wrote on this subject. The currents of Time will let these records last.

“Among the writers, whose works more immediately assisted in bringing on the revolution, we may record James Otis. In 1765, he wrote a pamphlet on the stamp act. This, at the time, was considered an excellent piece of fine writing, and was republished in London by the friends of America. The works of Mr. Otis were not numerous ; and there can be no doubt, but that his fame as an orator, added much to his reputation as a writer ; and more than this, the nature of his subjects at that time were all-absorbing. His writings, however, aside from their political character, had, it was agreed by friends and foes, great merit. He wrote, ‘A vindication of the conduct of the House of Representatives of Massachusetts,’ in 1762 ; the *Rights of the British Colonies Asserted*, 1764 ; and *Considerations on behalf of the Colonists*, 1765. These productions were scattered through the country, and every copy was read at least by five hundred persons, so popular was all he wrote at the time ; and in the discussions upon the subject, more anecdotes of the effects of his eloquence were told, than ever Greek or Roman had in store for the fame of Demosthenes or Tully : but abating much for all the enthusiasm of the times, there can be no doubt but he had a powerful pen, and a tongue of fire.

“Another of that band of patriots, whose writings did much to awaken and cherish the flame of liberty,

was John Adams. He wrote several essays over the signature of NOVAGLUS, in answer to some papers on the royal side, signed MASSACHUTENTIS, written by a lawyer of the name of Leonard. These were papers creditable to both, as matters of argument, and were admired and extolled, as people took sides. Mr. Adams was on the popular side upon the great questions then agitated in the country. During this period, he had acted in the highest political capacities ; but here we have only to mention his writings. He published ‘A Defence of the American Constitution,’ to appease an opinion then prevalent among many patriots, that a single assembly was the only true government. This opinion was advocated both in England and France, and it cannot be denied, was favoured by Franklin. Mr. Adams ransacked history to show that such a government was defective, and the theory is now at rest. In his old age and in retirement, Mr. Adams poured out his opinions in a series of pieces, which afford the statesmen many early facts, and opinions which are valuable to the historian. His style was bold and characteristic, and evinced marks of deep reading, and profound reflection.

“Samuel Cooper, a clergyman of Boston, was a constant writer in the cause of liberty. He wrote a political discourse, as early as 1759, on the taking of Quebec, which directed the attention of the politicians of the day to him, as master of a fine pen in the cause of rational liberty. All his writings, from that time, had a bearing on the great question between the mother country and the colonies. There was an eloquence and grace in his productions, beyond the style of the times, and he became a man of wonderful influence in all political controversies. Works of this nature, in some measure, lose their charm in an after age,—but Cooper’s writings are tasteful at this day.

“Josiah Quincy ranks among the writers of that day as wielding an elegant pen. He was a man of genius, and earnestly engaged in the cause of freedom : and when the Boston *Port Bill* came to this country, and was put in force, he wrote a pamphlet, entitled, ‘Thoughts on the Boston Port Bill, &c.,’ addressed to the freeholders and yeomanry of Massachusetts.’ It was spirited, and in many parts highly eloquent. He had much of the Grecian spirit, and not a small share of Athenian eloquence. He fell a victim to his vigils of patriotism in early life.

“One of the best writers of the age was John Dickinson, who was born in Maryland, but was active in Delaware and Pennsylvania. In 1767, he began to publish tracts against the taxation of the colonies. These were masterly productions, and deserve to rank

among the best specimens of American genius. He was a member of the Congress of 1774; and his pen was frequently employed in drafting the most important state papers. The address to the inhabitants of Canada, the first petition to the king, the address to the army, the second petition to the king, and the address to the several states, were written by him. One of these petitions to the king, was the production which called forth the memorable compliment from Lord Chatham, in which he called him superior to any classical writer of antiquity. While president of Delaware, he published a proclamation to his people, full of lessons of wisdom. When the constitution of the United States was under discussion, he wrote a number of letters, signed Fabius, in order to forward the adoption of it, which merit reading at the present day. Many other works came from his hand, all tending to public good. His works have been collected and published in two volumes; but are now only to be found in public libraries, and with those who are lovers of the curious and rare; they ought, and will be reprinted, and placed along side of the *FEDERALIST*, and other standard works of American literature.

"South Carolina boasts, and with justice, of her patriotic writers in the great cause of freedom, one of whom was William Henry Drayton. He was a prime scholar—enlightened and polished by foreign travel. On coming home, he became at once a patriot, and took up his pen in the cause of his country. He wrote a pamphlet, addressed to Congress, under the signature of 'Freeman,' in which he expatiated upon the grievances of America, and then openly stated their rights. He also published a charge to the grand jury of his state, which is now incorporated into the history of those times. He also wrote a history of the American Revolution, but his materials were not so extensive as those of Ramsay and others.

"William Livingston, of New Jersey, wrote many things to rouse the people of his state to vigorous exertions in the cause of liberty, and was justly ranked among the patriots and fine writers of his time. He was not confined to one department of literature, for his poetry had as much spirit as his prose. He presented to the New York Historical Society, or his son did, from his library, the journal of the British House of Commons for several years, comprising the period commencing a year or more before the death of Charles the First, and extending nearly to the time of the restoration. They are proved to be genuine and original from the following indices, viz.: from the water-marks of the paper on which they are written; the first volumes have the royal stamp on the

paper; the next, the fools-cap and bills, ordered by government in derision, to take the place of the royal arms;—this continues for some volumes, and then appear the arms assumed by the commonwealth; and then, those of the lord protector, Oliver Cromwell. These volumes unquestionably were brought over to this country by the regicides, who wished to hide the record of their proceedings, in order to prevent Charles II. from finding out all that was done in his exile. This was the safest place for them, and here they will be preserved for future history. It is a singular fact, that every English historian is silent upon their loss, and no one has ever pretended to quote these journals; yet much useful matter may be extracted from them, and many things that English history does not contain may be found there. Some one of the Livingston family may give a minute history of their being found in this country. It would be as acceptable as curious.

"David Dulany, of Maryland, was one of the writers upon political subjects, previous to the revolution. He wrote several treatises on the great subjects of taxes and other matters, which agitated the colonies at that time; but he did not live to see the end of the contest, in which he had so heartily entered, and with so much reputation. He was one of the number who were early called to their account; but it is a remarkable fact, that those who entered into the cause of freedom—heart and soul—lived longer than most other men;—whether it was because they were animated with heroic sentiments, or from some other reason, the fact is nevertheless certain, that the signers of the declaration of independence, as a body of men, arrived at a greater age, and died more quietly, than any fifty-six that could ever be named, as acting together in any important national concern.

"Virginia had her share of good writers, who were engaged in enlightening the American people during the revolutionary contest. The Lees were among the most distinguished. Richard Henry Lee, among other works, wrote what has been called the 'Farmer's Letters,' and the second address to the people of Great Britain. These productions evinced patriotism and scholarship. Arthur Lee, his brother, was also a political writer of distinction. He wrote letters under the signature of JUNIUS AMERICANUS, which held a high rank, at the time, among the literati of America. Mr. Jefferson wrote the declaration of independence, Notes on Virginia, and a Manual of Parliamentary Practice for the use of the Senate of the United States, which was an abridgment, with some alterations, from Hatsell's great work on the same subject. Hatsell was clerk of the House of Commons

from 1768 to 1797, and was thoroughly acquainted with all the rules and order of parliamentary proceedings, which is a science in itself, not thoroughly understood by many politicians. Mr. Jefferson's acute mind at once penetrated the arcana.

"It would be unjust to pass over General Joseph Warren, who fell at Bunker Hill, in our notice of those who had added to the stores of American literature. He was a frequent writer in the periodical journals of the day, where he poured forth all the warmth of his soul. He delivered two orations on the Boston massacre, one in 1772, and another in 1775; and perhaps no two orations since the days of Demosthenes' orations against Philip, ever had such an influence upon an audience, or such an effect upon the people generally. These productions have been used for declamation by every schoolboy since that time. The burst of indignation—the high toned patriotism—the fundamental maxims of a free people, all came in torrents of eloquence; and its effects were felt through the country. On the 17th of June, 1775, he sealed his course with his blood, being the first martyr of the revolution. He was assisted in defending the views of freemen and their rights, by Hancock, Church, and others of note, who were zealous in the cause of their country.

"The literature of the revolution was bold, direct, and without any affectation. Any high exertions of mind will produce new and ardent expressions; and these, after a while, will be moulded by taste. If you take the orders and proclamations of Washington—the letters written by him in the exigencies of the moment,—there will be found that strength and felicity of expression, that is supposed to be the offspring of care and leisure. Some of the writings of Knox, Schuyler, Brooks, Laurens, and others, during the most gloomy parts of the contest, are marked with excellent sense, and often are elegant compositions. The commentaries of Cæsar, were written in a camp.—When the mind is under excitement, we often find that it receives the best method of thought and expression. In the intercourse of a camp, some minds are always found, which give a direction and tone to the rest. It was so in our army; and even in a prison, instruction may be received.

"It is a singular fact, that the diplomatic correspondence of the revolution has not been surpassed; nor has modern times improved much upon the styles of Adams, Washington, Lee, Jefferson, Hamilton, or Dickinson. The poets of those days, had not the models before them, that they now have; but few productions contain more elegant satire, than can be found in M'Fingal, or more patriotism than can be

discovered in the arousing songs of Freneau. When one mind pervades all classes of men, improvement is rapid; every beam of light that is reflected, and refracted in a community, acting in unison, increases the force and power of the ray. If the whole nation had gone to school, instead of going to fight, they would not have learned as much as they did in the eight years' war they waged for independence. Heaven never intended that the choicest blessings should be had without pains and labour.

"Since the révolution, we may fairly class the writers that have been conspicuous in our country; for, notwithstanding our habits and forms of society did not allow any one to follow exclusively one course, yet there has been a finer opportunity for men to display their particular talents, than there was when every one bent his whole soul to one great object, that of gaining for his country the rank of an independent nation. A nation, like an individual, must go through a course of discipline, to form a character. It might be impossible to form a nation that should bring all their energies to the best possible direction, without going through a series of difficulties, teaching forbearance, sacrifices of local prejudices, and making each part acquainted with the characters of the whole. The revolution contributed as much to the advancement of learning, as it was necessary to the formation of national character.

"Before the revolution, it was difficult to place our writers into classes, for almost all were miscellaneous in their productions; since that period, notwithstanding no man has exclusively followed any one branch of learning, still the classification is more distinct than in former times, and we shall give an account of our authors and their works under distinct heads.

"HISTORY AND BIOGRAPHY.—Ramsay's history of the United States, ranks among the best works we have in our libraries. He had ample materials for his work, and particularly that part of it which relates to the revolution, as he was a member of Congress, at one time president of that body, and consulted with Washington upon all the important events of the revolutionary war. He was a fair-minded historian. He also wrote a compend of universal history, which did him great credit.

"Holmes' Annals of America, from 1492 to 1826—the second edition in two large volumes, is one of the most useful works ever printed in the United States. It is pretty copious, very correct in dates, and in description of events, and adorned with much accurate and excellent biography. It is written by a scholar, who had no prejudices, who is a great antiquarian, and a lover of his country; and if it now and then shows

a little more partiality to saints of his own creed than to saints of another creed, it requires no small sagacity to find it out. Every future historian will plunder him; but it will be impossible for any one to abuse him. A more unpretending, and a more valuable work, was never published.—Minot's histories deserve also special consideration. Smith's History of New York: the edition in two volumes, published by the New York Historical Society, which brings down the records of the state to the administration of Colden, in 1762; Williamson's North Carolina, Gordon's Pennsylvania, and his New Jersey; Mills' statistics of South Carolina,—also deserve notice. Marshall's history of the Colonies, and his life of Washington, are valuable works; what they want in the charm of fine writing is amply made up in accurate observation and impartial delineation.

"The histories of the several states have been written with more or less ability. Belknap's history of New Hampshire is a work of merit. He had access to the best materials, and he wrote with honesty, intelligence, and taste. In fact, it is one of the best specimens of the style of our writers extant. It is a remarkable fact, that no one has attempted the subject since, except in the way of illustration or explanation.

"Sullivan, a man of genius and learning, has written the history of the District, now the state of Maine, but his materials were scanty, and notwithstanding he did all that a man of talents at that time could do, yet a more copious history of that growing state is wanted.

"The history of Massachusetts has been more fully written out than that of any other state. In addition to the works of Winthrop, Hubbard, and others of the early settlers, we have many of modern times that are worthy of notice; such as Minott's and Bradford's histories of Massachusetts, and Hannah Adams' History of New England. This lady was one of the most candid and accurate historians that ever wrote. She set down no assertion that had not proof to support it, nor one that had a particle of prejudice to be abstracted from it. It may be said, without fear of contradiction, that the historians of New England have been more assiduous than those of any other portion of this extended country.

"Trumbull's history of Connecticut is a good ground work for a future writer. He is explicit and honest; had nothing to disguise, nor did he 'set down aught in malice.' The history was an eventful one, and he handled it with great simplicity.

"Professor Williams has written a history of Vermont, but that state has so wonderfully increased in

population, wealth, and character, that it will be only the ground-work of a more full history: but it is fortunate that this ground-work is so philosophical. The commencement of most histories is fable and romance—this is otherwise, being fact and philosophy.

"Flint has written a history, and given some account of the geography of the Western States. He is shrewd, capable, literary, and eloquent. It is impossible that he should have done entire justice to this new world in so small a compass—but it is the first of all considerations, that what is done, should be well done,—this praise no one will deny him. It is to be wished, that he may live to fill up his great outlines.

"In modern times, Yates and Moulton have written most excellently upon the history of New York, and these men are capable of giving a full history of this state; but this will not probably be done, until the government of the state make some provision for forwarding the work. To give a fair and correct history of this state, requires more research and labour, than to write the history of any other of the states, as more than half a century of it is in Dutch records. It is said that the materials are ample, and there can be no doubt of it, as the Dutch were the most minute, pains-taking, and accurate of the nations of Europe, and they could not have been wanting in making journals and observations on all the passing events of the times in which they lived. New York, the centre of the union, and the mart of the world, should have minute and well written accounts of all she has done, and all she is.

"Stoddard has made some judicious sketches of the history of Louisiana, which deserve credit: but that old territory, though new to the United States, deserves a full history. It is already, and every day becoming more important to the United States, and should be fully known to all the members of this great republic.

"McCall has, with considerable talent, given us a history of Georgia, but there is a more ample field than he had at that moment means to explore. This state is now a large one, although the last settled of the old thirteen states. The character of Oglethorpe, the founder, has not yet been fully written out.

"The histories of Ohio, Kentucky, Missouri, Indiana, Mississippi, and other new states, have only been partially written. The lovers of history should, at this moment, set about making exertions to have all the facts relating to those interesting sections of the country gathered up, and put into proper form.

"Pitkin's Political and Civil History of the United States is a valuable work. It covers a period from

1763 to 1798. This work shows us more of the labours of the statesmen of that period, than any other production. Miller's *Retrospect of the Eighteenth Century* is a work of great research. It was printed at the commencement of the nineteenth century, just as American literature began to expand. Thomas' *History of Printing* is a curious book. The writer has done much for learning, by establishing an antiquarian society, and gathering a fine library for public use. He was a printer himself, and had treasured up many important facts. Lyman's history of the Diplomacy of the United States is valuable to every statesman and historian. It required no small share of perseverance to collect and arrange such a mass of matter.

"Mr. Sparks, an able scholar, who has the Washington papers, amounting to sixty volumes of manuscripts, and a mass of other matters from the Colonial office in England, is now furnishing the country with a view of these subjects, on a most extended scale. It will be several years before his labours can be finished, for he does every thing thoroughly.

"In biography the country has been pretty well supplied since the revolution. Besides the Biographical Dictionaries of Elliot, Hardie, Allen, Rogers, and others, we have many works on this subject, containing only a few names, or, in many instances, only one name. Ramsay, Marshall, Bancroft, and Weems, have published lives of Washington in good sized volumes; and a hundred sketches of the Father of his country may be found in the journals published since and before his death.

"One of the most elegant pieces of composition to be found in our language of the kind, is Washington Irving's life of Columbus. He went to the fountain-head for his materials, and spared no pains in working them up.

"Tudor's life of Otis is a valuable work, not so much for delineation of character, as accurate historical anecdote. He was an excellent scholar and a great lover of his country.

"The Lees of Virginia, whom we have heretofore named in this sketch of literary history, have found an able historian in one of their descendants.

"Wirt's life of Patrick Henry has been one of the most popular works ever printed in our country. It has lately appeared in a new edition, with the memoir of the author, written in good taste.

"Judge Johnson's life of General Greene, is an elaborate and a minute work, enriched by some of Greene's correspondence, which shows the directness and strength of his mind more than any thing could do unsupported by such proof.

"A life of Gouverneur Morris has been given by Mr. Sparks, in addition to his other labours, which is a most interesting book, full of the events of the French revolution, a most important period in the civilized world. The same author has also given to the public the life of the traveller Ledyard, whose sober history, without a particle of embellishment, is a romantic tale.

"Sanderson's lives of the signers of the declaration, is a clever work. A volume containing their lives was printed at Hartford; and brief sketches of these distinguished men will be found in the first volume of the *TREASURY OF KNOWLEDGE*, from another hand.

"Colden's life of Robert Fulton is a valuable work. It proves how much can be done by genius and perseverance. Every inventor should read this book, when discouraged by untoward events; for never was there a more persevering spirit than Robert Fulton. Who has, in the end, done more good?

"Very recently the more important annals of the revolution and events subsequent have found valuable historians in the life of John Jay, the eminent statesman, by his son William Jay; and in the life of the illustrious Hamilton, by his son John Hamilton; the first volume only of this work has yet appeared: it brings down events to the termination of the revolutionary struggle.

"Of works which will hereafter be deemed of value to the historian, as illustrating the history of the times, Theodore Dwight's Account of the Hartford Convention will claim special consideration.

"The life of Wm. Livingston, of New York, has lately been written by a worthy descendant of his, Theodore Sedgwick, Jr.

"Brown, the novelist, wrote the life of Dr. Linn. It is a fine specimen of writing, and of warm and affectionate colouring. The writer and subject were poets and friends. There is a glow in this little work that would do honour to the pen of Burke.

"Dunlap, the painter and dramatist, several years since published the life of Charles Brockden Brown. It is a fair and faithful account of that distinguished writer, who died before the public could fully appreciate his merits. In the minds of many it was thought almost criminal to deal in fiction, and some esteemed it a species of falsehood; but since Brown's death this prejudice has been scattered to the winds by the magic wand of Sir Walter Scott, and many admirable lessons of wisdom been given through the medium of fiction.

"Dr. Hosack's memoir of De Witt Clinton was written soon after that great statesman died. The

work contains many valuable facts for the future historian, expressed in a clear and perspicuous manner. The obitulist seemed fearful of eulogy, and of being considered too partial to his excellent friend, and has spoken of him in a subdued tone, when he might have indulged in higher notes of praise.

"The lives of the late venerable pastor of sacred theology, Dr. Livingston, by A. Gunn, D. D. and of Dr. John Rogers, by Samuel Miller, D. D. will be consulted by the historians of ecclesiastical affairs. A similar remark may be made concerning Bishop White's memoirs of the Protestant Episcopal church.

"THE POETRY OF THE UNITED STATES, *since the declaration of independence*.—The Conquest of Canaan, an epic poem, by Timothy Dwight, was not published until 1785; this was hailed as a work of high merit. It was written when the author was quite young, and is full of poetry, certainly; and a hundred years hence, will rank higher than it now does. He wrote Greenfield Hill, and several other poems. Dwight was a man of genius, of acquirements, and virtue; but he lived too much with the pious and particular, to become sufficiently acquainted with those incidents that mark the pathway of mankind in general, a knowledge of which is so essentially necessary to the poet. He was a virtuous man and a good scholar.

"Joel Barlow published his Vision of Columbus, in 1787, and dedicated it to Louis XVI. After the first publication, he remodelled it, called it the Columbiad, and made it quite another thing, in politics. This has appeared in a most splendid edition in this country, and in the opinion of many, stands at the head of our poetry. He wrote other works, such as, Conspiracy of Kings, Hasty Pudding, &c.

"General Humphrey also wrote poetry, and was considered as one of the poetic trio of Connecticut at that time. He, with Trumbull, Barlow, and Hopkins, wrote the Anarchiad. In 1782 he published a poetical address to the armies of the United States. He wrote a poem on the happiness of America; on the future glory of the United States; on the industry of the United States, &c. &c. He had more of the polish of the soldier than the spirit of the poet; but he has many admirers, and still holds a rank among the best and most patriotic writers of this country.

"Richard Alsop was one of the Connecticut poets, who wrote for the pleasure of the hour. He has the credit of getting up the Echo, a work of great poetical power, sometimes in burlesque and sometimes slyly grave. This work contained some admirable hits upon the reigning follies of the times, and now

and then drew a feather across a favourite's nose. Alsop left several unpublished poems, and published a good many things for amusement only. The Echo is one of the best satires ever written in this country. His coadjutors were Theodore Dwight, Trumbull, Hopkins, and others, not so distinctly known.

"Mrs. Warren should have been named before these bards. She wrote two tragedies, '*The Sack of Rome*,' and '*The Ladies of Castile*.' These were written during the war, and all for patriotic purposes. Previous to them she wrote a play, called '*The Group*,' which contained some forcible satire, and had a decided effect at the time. She was a sister of the great patriot, James Otis, which gave some eclat to her writings. She was a woman of genius, and a good writer.

"Judge Dawes, at the close of the revolutionary war, wrote some fine poetical pieces, among which were '*The Law given on Sinai*,' and '*An Ode on the Death of James Otis*.'

"Dr. Joseph Brown Ladd, who died in Charleston in 1786, in the twenty-second year of his age, was a fine poet. He wrote many things worthy of being preserved. His sister has lately gathered up all the pieces she could find from his pen, and published them in a neat volume. It does credit to her affection and his genius. It contains a short but elegant biographical notice of Ladd from the pen of William Chittenden, Esq., a tasteful and spirited writer of the city of New York. His prominent poems are, an '*Ode to the Sun*,' and '*The Appeal of Almasi, the wife of Almaz Ali Cawn, to Warren Hastings, governor-general of India*.' He wrote many other pieces, particularly a series of poems under the signature of Arnoret. These productions, and many of prose, from his pen, bear marks of genius, and of precocious acquirement.

"John Blair Linn wrote poetry of no ordinary character. He was a lawyer, a dramatic writer, and then a divine. He wrote a poem on '*the Death of Washington*,' '*The Powers of Genius*,' and a play, called '*Bourville Castle*.' He died young, much respected.

"Robert Treat Paine claims a high rank among the poets of his time. He wrote '*The Invention of Letters*,' '*Adams and Liberty*,' and '*The Ruling Passion*,' with occasional songs and odes; one, '*the Steeds of Apollo*,' was his last, and in better taste than most of his other productions.

"John Lathrop was contemporary with Paine. He was a poet of taste, but did not write much. His longest poem was entitled '*Canonicus*,' published first in Calcutta, and reprinted in Boston.

"Charles Prentiss was among the bards of that time. He had taste and versatility. His 'Will,' a playful poem, written while at College, gave him a high rank in the catalogue of wits and poets of the age.

"William Boyd wrote a poem 'on Woman,' remarkable for delicacy and smoothness. It has been read by the fair ever since, if not with the highest admiration, certainly with great pleasure.

"William Clifford, a young quaker of Philadelphia, burst out into a most courteous address to Gifford, praising him for his *BAVIAD* and *MÆVIAD*. He wrote some patriotic songs, which were quite famous in their time. What he wanted in the inspirations of the muse, if any thing was wanted, he made up in patriotism.

"Paul Allen, Isaac Story, Captain Spence, and Selleck Osborne, were all poets, and some of them have been highly praised, and no doubt with propriety.

"Some few who have written since, have gone to their long account, and of course we can speak of them as if they had not been our contemporaries. Some of them wrote beautifully, and their works should be preserved by the generations to come. It is easy for the just to secure what the envious would wish to destroy.

"John G. C. Brainerd, who died a few years since in Connecticut, was a man of talents and principle. The columns of the *Hartford Mirror* bear testimony to his acquirements and taste. A friend of the deceased has gathered up his fugitive poems, and printed them with a delicate memoir of the poet. His temperament was sensitive and melancholy. He loved not the world, and was taken from it early, being only thirty-two years of age.

"Robert C. Sands, who has lately descended to the tomb, at the same age, was a fine scholar, of exquisite taste, and devoted to literary pursuits. He was one of the authors of that fine poem, *Yamoyden*, which he wrote in company with young Eastburn, who died several years before Sands. His works are now preparing for publication by his friends. Some of his poetry, written when quite a boy, is not inferior to the early productions of Henry Kirke White. Sands was one of the best classical scholars of our country, and his works will be read with pleasure, as containing many flights of a vigorous and fastidious muse.

"The late Dr. Drake of New York, was the author of several poetical effusions of rare merit. Our only regret when perusing this writer's compositions is, that they are not more numerous.

"We pass over the living poets, still with pen in hand, without comment, as the time has not come to do them justice, or to speak of them with freedom. Many of them have acquired an enviable fame in the pursuits of literature—Bryant, Halleck, Dana, Sprague, Pierpont, Mack, Wetmore, Mrs. Sigourney, Miss Gould, Mrs. Ware, Mrs. Hale, Mrs. Child, Woodworth, Willis, and hundreds of others, who occasionally cultivate poetry as an amusement, but few or none of them as a profession. Our votaries of the muse are often discouraged from venturing on the wing, from watching the flights of the eagle geniuses across the water, forgetting that most of these writers make poetry the great business of their lives. Should some of our most gifted writers devote themselves assiduously to poetry, we might soon vie with England in poets as we have in orators. Life is too short for any one to attend to many things. Few American poets keep their pieces 'nine years;' their productions often reach an annual, or some periodical, in as many hours; being things thrown off as occasion demands, or as caprice may inspire.

"DIVINITY.—In 1793, Dr. Hopkins, a shrewd and deep metaphysician, published a system of divinity, which was the foundation of a new sect. He differed from Calvin in some things, pushing his doctrine even beyond the great reformer himself. This system had a host of opposers, many of them very learned men.

"Doctor Timothy Dwight's system of divinity, published since his death, is the most voluminous in the country, is remarkable for clearness and fairness, and seems to be the most popular of all the theological works ever printed in the United States. The beauty of his life gave a charm to all matters from his pen. His doctrines are distinctly Calvinistic.

"For several years, a spirited controversy was carried on between the orthodox and the Unitarian clergy, in which several gifted and learned men took part—Noah Worcester, Samuel Worcester, Mr. Stewart, Doctor Wood, and others, on the side of Calvinism; and Doctor Channing, Mr. Norton, Doctor Ware, Mr. Whitman, and others, on the Unitarian side. It was a 'war of the giants,' and they perhaps now only rest from their labours, neither being vanquished. The reading public have derived much instruction from this collision of mighty minds.

"Doctor Emmons has published several able discourses, which should be read by those who do not, as well as by those who do, agree with him in sentiment: Emmons belongs to the Edwards school of metaphysicians.

"Doctor Freeman has published a volume of ser-

mons. Those who do not follow his creed, must admire his liberal views, and his pure and elegant literature.

"Joseph Buckminster's sermons, published since his death, have more of the charm of fine writing, than any that have ever been published among us. If, as some have said, there is a want of evangelical divinity in them, even these critics could not deny the fact, that there is an Apostolic purity running through them, which chains the heart to the memory of such a man, and fixes the attention to so sweet a writer. His Phi Beta Kappa oration is a splendid specimen of writing. His friend Thatcher wrote a memoir of his life. It was a description of a bright, particular star, that rose, culminated, and set for ever, while the magi were gazing at it.

"Others have written volumes of sermons, and almost every clergyman prints an occasional discourse; but as yet, few works on theology, written in the United States, have issued from the press. There are several theological periodicals that discover great learning and research. The Christian Examiner, published at Boston, is much read and admired by the Unitarians, and commands the respect of other sects for its chaste literature, gentlemanly courtesy, and high moral tone.

"The Biblical Repository, published at Andover, in Massachusetts, is a quarterly work. It is learned, and every day rising in reputation. Andover Theological Institution met with much opposition in getting a charter. One of its advocates said, at that time, 'no matter what creed they avow, give them an opportunity to become learned, and they will, in the end, be right, whether it be your creed or mine, or neither, they shall hereafter teach.' The Christian Spectator, published quarterly at New Haven, is one of the most acute and candid of all the reviews in the whole country. We differ from many, in thinking that the science of theology is yet in a crude state among us. We believe that it has received more attention than any other science, and is better understood. It is a science which can never be brought to any degree of perfection. That part of it which is founded on nature, is as well read as it ever will be in regard to a reverence of the Creator; and that which is founded on the faith once delivered to the saints, will, in a free country, for ever be construed by each one as he pleases. Between man and his God, there is a communion that no philosophy can long interrupt, and no false glare long delude. Man knows his responsibility; he feels it every hour, and if he is 'taught to stray' for a season, he comes back with a due sense of his dependence, and of the

necessity of forgiveness and mercy. There are several, it is said, who are deeply engaged in giving us true versions of the scriptures; we wish them success. It can not be doubted, that it is not only the prerogative of man to be constantly reasoning upon his Maker, as well as his own being;—his benevolent God has so ordained it, and the creature should be in the discharge of his duty. Toleration, which our constitutions of government sanction and defend, can alone advance the nation in the science of theology.

"FICTION.—As we have before remarked, the grave character of the people of the British colonies in this country, almost entirely precluded works of fiction. But among the first who ventured indirectly to break the spell, was a reverend divine, Doctor Belknap. He wrote the Foresters, a story made up to divulge some of his sentiments upon history, politics, and manners, which he thought it was not prudent to express directly. This work was extensively read in every part of the United States, and much admired.

"At the head of American novelists, is Charles Brockden Brown. He published several novels, viz. Wieland, Ormond, Arthur Mervyn, Edgar Huntley, Clara Howard, and Jane Talbot. They were admired by a few men of feeling and taste, but he was suffered to expire before they reached any prominent eminence. Since his death, they have been reprinted in this country and in England, and have received no small share of praise from able critics. No one who has read his works, will deny them the merit of striking incident and vivid description.

"Mrs. Foster, soon after this, wrote 'the Boarding School,' and 'the Coquette.' The latter caused considerable excitement, as some of the principal characters were well known. These works had the merit of being written in good English, and the Coquette was a sad tale, too true to be called fiction.

"Mrs. Rawson, who for many years was at the head of a school for young ladies, wrote, besides school books used in her institution, several novels—Charlotte Temple; the Sorrows of the Heart; Montoria, or the Young Lady's Friend; Sarah, or the Exemplary Wife; Reuben and Rachel; a sequel to Charlotte Temple; and several others. These were all read with avidity, for it was well understood that her English was good, and her motives pure. Charlotte Temple went through nearly twenty editions.

"Since the novels of Walter Scott have been extensively known, several candidates for fame in this path have started forth; but no one has gained more celebrity than James Fenimore-Cooper. His Spy, Pioneers, Red Rover Last of the Mohicans, the Wept

of Wishton-Wish, the Pilot, and others, have all been extensively read and much admired, not only in this country, but in England, France, and Germany.

"James K. Paulding has written several good novels and works of satire. His *John Bull in America*, made those for whom it was intended, feel severely. His *Dutchman's Fireside*, and *Westward-Ho*, have been very popular. He is a prompt and rapid writer. Having been one of the authors of the *Salmagundi*, placed him early on elevated ground.

"Timothy Flint, of the Western country, has written a novel called *Francis Berrian*, that has been much admired, not only at the West, but also on the sea-board. He has devoted himself to literature, and deserves the generous patronage of that growing empire.

"Miss Sedgwick is among the very best writers in the United States; always sensible, correct, and moral. She sees clearly, and expresses forcibly what she means. Like Miss Edgeworth's works, her *Redwood*, *Hope Leslie*, and *Clarence*, will be read in future days with as much interest as they are at present.

"Mrs. Child's *Hobomok*, *Rebels*, &c. have been justly praised, and by those who have taste and judgment.

"**LAW.**—For many years the press has teemed with reprints of law books; to many of them notes have been appended. The twelve thousand practising lawyers in the United States, are in general well provided with law books. Not only the laws of every state, but the reported decisions of most of their highest courts, are readily found in every city, town, or village. Some of the best scholars of the country have been engaged in multiplying books on the science of law. Books of pleadings, and practice, have been published in almost every state in the union, and have afforded excellent guides to the practitioner. It would exceed our limits to name a tithe of them. A few who have engaged in great labours we will mention. Mr. Adams wrote an essay on Canon and Federal Law, which had a great reputation at the time. Nathan Dane was engaged for forty years in making an abridgment of the law, which he finished eight or ten years since, and published it in six large octavo volumes. He is considered one of the profoundest lawyers of the country.

"Chancellor Kent's *Commentaries on American law* is considered by competent judges, to be one of the best works since Sir William Blackstone published his commentaries.

"Judge Story's overflowing and excursive mind,

has been busy upon almost every part of the law, from Constitutional Law to that of Bailments, Shipping Bills of Exchange, &c. &c. The bar and the bench are deeply indebted to this indefatigable jurist, who has brought the mind of a statesman to the detail and principle of jurisprudence.

"Louisiana is indebted to the late secretary of state for the United States, Edward Livingston, for arranging the civil code which is now in force in that state. By this code, every action is commenced by short petition or statement. The whole of the complex machinery of the common law is dispensed with, and the forms of special pleadings unknown in their courts. Mr. Livingston has been employed for several years in forming a code of criminal law. It is divided into a code of crimes and their punishments, a code of procedure, and a code for regulating Penitentiaries. The whole is a work of great labour, deep research, clear views of human nature, with a current of benevolence running through it, that has made it the admiration of the enlightened in every country. If the code is not in all its parts adopted, its spirit will, in time, pervade the criminal code of all civilized countries.

"**MEDICINE.**—Since the peace of 1783, there has been more activity in the profession of medicine and surgery than in any other. This profession furnished several brave officers in the revolution, and many statesmen since; among them were Brooks, Cobb, Mercer, St. Clair, Gadsden, Bricket, and many others. The first martyr in the cause of the revolution was Dr. Joseph Warren. His brother, Dr. John Warren, was surgeon-general of the northern army, and left the office to pursue his practice in Boston. The Medical School at Cambridge was got up under him, and a few others. Dexter, Waterhouse, and others, were his coadjutors in the cause. This was the second medical school established in the United States. Dr. Rush had devised a medical school in Philadelphia previous to this time, which may be considered the first in point of time, as it regards its foundation, and most assuredly has been second to none in its success in forming the medical mind in this country. In this school the eloquent Shippen taught anatomy. The one in New York followed, and it has been honoured by distinguished professors. The classical Bard; the learned Mitchill; the tasteful, indefatigable, and copious lecturers, and medical writers of a more modern day, Romaine, Hosack, Miller, Francis, and many others—have added to the science of the healing art, besides exerting a fatherly care over science and letters in general. The medical school at Dartmouth College was the fourth in the country, has flourish

ed ever since its commencement, and with its seniors, is every day enlarging its influence. Next followed the University of Maryland, and then that of Kentucky. Since that period many others have grown up, which have produced many distinguished professors of surgery and medicine. It is now difficult to succeed as a quack, except in some of the most ignorant parts of the country, and there they are often ferreted out.

"The medical literature of the United States demands a passing notice. The momentous discussions which occupied a large share of the attention of the faculty, have been connected chiefly with the origin, nature, and characteristics of the several epidemical fevers which have prevailed at different times, more especially in the various maritime cities, since 1793; discussions involving the contagious and non-contagious quality of yellow fever: whether it be of foreign or domestic origin; and the law by which its communicability is governed. Mr. Noah Webster, the distinguished lexicographer, though not a medical man, long ago favoured the public with a rich repository of facts on pestilential disorders, in a *History of Pestilence*, in two vols. 8vo. The writers who have rendered themselves conspicuous on this vexed topic, are, Rush, Miller, Smith, Mitchill, Hosack, Caldwell, Brown, Bowen, Monson, Drysdale, Griffiths, Ramsay, Moultrie, Pascalis, Townsend, &c.

"Besides these, many others have given their facts and opinions on the subject, in the *New York Medical Repository*, edited by Mitchill and Miller; the *New York Medical and Physical Journal*, edited by Drs. Francis, Beck, and Dyckman; Hosack and Francis' *American Medical and Philosophical Register*; Coxe's *Philadelphia Museum*; *American Medical Recorder*, &c. &c.

"The non-susceptibility of the constitution to a second attack of yellow fever, or the greater chance of exemption from its influence a second time, seems to be pretty generally admitted by those most experienced with the disease, as demonstrated by J. W. Francis' *Letter on Febrile Contagion*, dated London, 1816. Besides the periodical works to which reference has just been made, there are several others deserving of consultation by the medical historian, as the *New England Journal of Medicine and Surgery*; the *Monthly Medical Magazine*, published at Boston; the *American Journal of the Medical and Physical Sciences*; the *North American Medical and Surgical Journal*, &c. Many distinct works or monographs of acknowledged merit, might also pass in review, even in this imperfect sketch. Among the earliest publications in America on medical subjects, may be enumerated, Boylston's *Essay on Inoculation for*

the Small Pox, 1726; an *Essay on Fevers*, by Dr. John Walton, Boston, 1732; Colden on the *Yellow Fever of New York*, in 1742; Dr. Cadwallader's *Essay on the Iliac Passion*, 1740; J. Bard's *Essay on the Malignant Pleurisy*, 1749; Middleton and Bayley on *Croup*; Jones on *Wounds and Fractures*, 1775; Lining on the *Yellow Fever*, &c. &c. The voluminous writings of Dr. Rush; the medical works of Miller; the *Essays and Fragments of Barton*; Gallup on *Epidemics*; Warren on the *Diseases of the Heart and on the Nervous System*; several tracts by Drs. Hall and Ware, of Boston, by Cathrall, Mease, and Currie, of Philadelphia, and Drake, of Cincinnati; the *Therapeutics of Dr. Chapman*; the *System of Midwifery*, and the *Treatise on the Diseases of Females and of Children*, by Professor Dewees; the medical writings of Nathan Smith, North, Tully, Minor, Eberle, Jackson, Waterhouse, Cooke: Hosack's *Essays on various subjects*—contain a great amount of information on topics purely practical, and on the rise and progress of medical education in the United States. The *Systems of Anatomy*, by Wistar and by Horner; the *Systems of Surgery*, by Dorsey and by Gibson; and the surgical papers of Physic, Post, Mott, Parish, and other eminent professors of the chirurgical art, will also receive the tribute of regard by all who are solicitous of the reputation of the adepts in the science of the healing art. In juridical medicine, Professor T. R. Beck, of Albany, has laid the profession under lasting obligation, by his scientific and popular treatise on that subject. A *System of Chemistry* was published by Dr. Gorham, of Boston, in 1819. Dr. J. Bell, of Philadelphia, has lately favoured the public with a work on the *Mineral Waters of the United States*. Professor Silliman has recently issued a work on *Chemistry*, and his periodical journal is a rich repository of facts and opinions on the natural and physical departments of knowledge. In botanical investigations, Torrey's *Flora*, with Muhlenberg's performance, and the productions of W. P. C. Barton, of Philadelphia, Bigelow of New York, and Elliott of South Carolina, are all that can at present be cited here.—No one perhaps would deem himself fully qualified to become the medical annalist of the United States, without an examination of the *Medical Biography of the venerable Dr. Thacher of Plymouth*.

"Medical Journals are now before the public as periodicals, which do honour to the talents and acquirements of their conductors and contributors; and it is not a little in favour of the profession, that the faculty are among the best friends of learning in the country. The fears that were once entertained, that the study of medicine and surgery lead to materialism,

are now done away with ; for it is now conceded that the studies connected with this profession, when fully carried out in the forms of physiology, pathology, and mental phenomena, are all proofs of infinite wisdom, and a divine superintendence. If fifty years ago there were few believers in this profession, it may now claim many of the most devout piety. It would be an invidious task to name those who have been distinguished, where all are so respectable.

"THE ARTS AND SCIENCES.—That our country abounds in inventive genius no one will question who takes a glance at the patent office. In the course of forty-three years, the length of time the patent office has been established, there have been more than seven thousand inventions recorded ; and if you would say that there was much trash, it must, on the other hand, be agreed, that many things there have a claim to a high character in the Arts. Jacob Perkins invented many things which have saved the labour of many—his nail machine, and many others. Whitney's cotton gin, as was said by a learned judge, has doubled the value of every acre of land in North Carolina and Georgia. Whittemore's card-making machine was one that received from the strange man of Roanoke, an almost irreverent compliment, that it was "*like the love of God, which surpasses all understanding*." The power looms of Stinson have been in use in every part of the country, and have saved labour to an almost incalculable extent. Look at the store-house of these models, and one could not say the inventive power of the nation has been idle.

"In Mathematical science we have not been deficient ; the American mind is naturally mathematical, certainly arithmetical. Many of our countrymen have been distinguished abroad for their advancement in this science. Nathaniel Bowditch, LL. D., the author of several works on navigation, comets, and lastly, the translator and commentator of La Place, is at the head of our mathematicians. Professor Dean, Adrain, and many others, are conspicuous in this department of science. A higher knowledge of this science is now required at our colleges, and this branch is certainly much more attended to every where than formerly. It is found advantageous in the business of common life. No branch of knowledge is so easily acquired, with proper instruction, as this ; yet no one gives its possessor more celebrity. Two years spent in acquiring the varieties of Greek literature would hardly advance a well bred scholar so as to be perceptible to his learned friend ; but two years study in mathematics would be very perceptible.

"A slight view of our history will prove that we have been prolific in painters, from Symbert down to

the present time. *West* was born in the United States, but his faculties were developed in England.—*Copley* was a native of this country, and reached a degree of perfection in his art, before he left it, that would have made him one of the first portrait painters of any age. Hundreds of his portraits are preserved among us. *Stuart* returned to this country in the latter part of the last century, and for many years stood at the head of his profession, as a portrait painter. He has left numerous paintings to preserve his fame, and to show the extent of the power of his art in this line. *Trumbull*, the first historical painter of our country, still lives, and probably like *West* will die as it were with the pencil in his hand. He is as lively as if in the noon-day of life. *Vanderlyn*, who gained laurels abroad, is now engaged on a likeness of Washington for the Hall of the House of Representatives, in the federal city. *Dunlap* is engaged as usual in instructing those of the present generation what those of a former one suffered. The new generation of painters, Morse, Cole, Frothingham, Inman, Leslie, and many others, are busy in their calling.—There is no danger that this branch of the Arts will deteriorate in their hands.

"Some few in sculpture are becoming known ; Auger's Mercury, and Jephthah and his daughter, with Greenough's chanting cherubs, have already gratified the tasteful in the art ; and other works are soon expected from their hands. A taste for specimens of sculpture has been awakened in this country, and we trust patronage enough to support it will follow. The fine arts are of slow growth among a people who are engaged in building up their fortunes. Monuments to departed greatness are becoming common, and artists will find employment in this branch. Frazee, (late of New Jersey, now of New York,) the self-taught artist, has given reason to think he will eminently excel, by his admirable busts of Jay, Webster, Bowditch, and N. Prime. The monuments lately erected to Kosciusko, at West Point ; to Thomas Addis Emmet, in the city of New York ; to Bishop Hobart, in Trinity church ; are proofs that sculpture is now held in estimation. What can be more delightful to a grateful people, than these memorials of genius ? They are the tribute of the living, which pass not suddenly away.

"VOYAGES AND TRAVELS.—In this department we have some valuable works : Delano's Voyages, Riley's Narrative, Lewis and Clark's expedition to the sources of the Missouri, Pike's expedition to the sources of the Mississippi, Major Long's expedition to the Rocky Mountains, Keating's account of Long's travels : Doctor Dwight's travels in the United States,

abounding in incident, and elegant description, and containing much valuable historical knowledge: Professor Silliman has published travels both at home and abroad; he is a chaste and careful writer, who sees all things with the eye of a philosopher. Flint has given us a good account of the western country, its manners, habits, and customs. Captain Benjamin Morrell has just published an account of four voyages to various parts of the world. His book abounds in incidents, contains much nautical information, and more poetical feeling than often falls to the lot of a hardy sailor. Mrs. Abby Jane Morrell, wife of the above named Captain Morrell, was with him in his last voyage to the Southern Pacific, and has published her narrative. It is a curious work, and shows with what intensity a woman views every novelty: She is the first female voyager from the United States who has published a journal. Bigelow has given us a volume of travels in Europe, of deep interest: he saw things as a scholar should view them, and describes with great faithfulness.

"Dr. Griscom's travels are full of instruction; he went out to see and describe, and all is done in purity and honesty. His principles were too firm to be led astray by false lights of philosophy, and he had no prejudices to indulge.

"The Letters from Europe, comprising the Journal of a Tour through Ireland, England, Scotland, France, Italy, and Sicily, in the years 1825, 1826, and 1827, by N. H. Carter, obtained for their author a most favourable consideration among the literati; and he stands prominent in the list of Americans, who have visited with a generous spirit foreign countries.

"**MISCELLANEOUS.**—Under this head we might make a large volume without enumerating one half of those works, more or less valuable; many of them of a high character. In philology, Noah Webster stands without a rival. He has spent a great part of a long life upon the subject, and if he is not without some errors and inconsistencies, they are more attributable to the nature of the science, than to the want of care, industry, or learning, in him.

"We are well stocked with school books, geographies, gazetteers, grammars of all sorts, and arithmetics of all plans. In statistical works we are becoming rich. Several are labouring with assiduity in this department. The Gazetteer, by Edwin Williams, abounds in tabular information, as in other valuable matter.

"In Rhetoric we have several elementary treatises, but no great work, except John Quincy Adams' Lectures on Rhetoric and Oratory, which is a work of genius and of bold opinions. He has been too much

engaged in politics these twenty years past to give them a finishing touch.

"The Conversations Lexicon, printed in Philadelphia, and edited by Lieber, Wigglesworth, and Bradford, assisted, it is said, in some parts, by Robert Walsh, has added much to the facilities of giving information on general topics. Some of its biography, however short, is happy, and the articles in regard to the United States are written in a spirit of candour, and the information is generally drawn from good sources. This book will be extensively read, and find a prominent place in every village library. The plan is a good one, that of adding information respecting our own country to that brought from abroad, and giving, at a glance, a panoramic view of a subject."

Of the various subjects which present themselves in taking a view of the state of society of any country, we deem the *manners* of its inhabitants to be the most difficult; and of all the countries of which an Englishman could undertake to form an impartial opinion, the North American republic is the most embarrassing. We are fully aware that this doctrine is far from according with that of some of the first critics of the day, who never feel more at home than when indulging in flippant and ignorant, but to them, and as they suppose to their readers, agreeable animadversions on the "barbarous manners" which "blighting democracy" has spread over the whole surface of society in the United States. If, however, they would reflect for a moment, that no one nation can be an authorized judge of another on such points, since no international standard has been yet agreed upon—that what is viewed by the polished and refined of one country as barbarous, is received in a very opposite light by the same class, (with regard to that appellation,) in another—they might be induced to hesitate before they assumed a superiority; which, however gratifying it may be to themselves, can carry no conviction, and may justly inspire, not only resentment, but contempt. Not professing to have a knowledge of this subject by personal experience, we have felt it our duty (and an irksome one it has proved) to become acquainted with, we believe, nearly all the statements of travellers in the United States for the last thirty years; and the impression it has left on our minds is that of astonishment, that such a mass of contradiction and absurdity could have been produced on any given subject; nor do we think it would have been possible, had not one of the leading periodicals of the day encouraged such publications, to their too great honour and its own disgrace, by affording the most contemptible of them a prominence it awards to no other publications.

of such a character in any other department of literature.*

In one principal aspect, manners may be said to consist in the external mode in which the several duties and relations of social life are discharged. We shall speak, therefore, first of that which exists between parent and child. It has been affirmed by several travellers, that the effect of republican notions on this relation has been to destroy the authority on the part of the parent, and respect and obedience on that of the child. Mr. Bristed, Mr. Janson, and others, affirm this to be their opinion. We believe, however, if there are some families in England where more authority is exercised than in America, there are many others where there is less; and that the average of obedience is equal while it is more uniform and rational.

The relation of husband and wife appears to be sustained with a fidelity unknown (as a national characteristic) in European states. Married females, it is admitted by all, even by Mrs. Trollope, are either engaged in their domestic duties, or in works of benevolence. We shall present our readers with her description of the life of a lady of "a senator and lawyer of the highest repute;" only premising that some of the points at which she aims her sarcasm meet with our admiration and approval:—"She has a very handsome house, with white marble steps and door-posts, and a delicate silver knocker, and door-handle; she has very handsome drawing-rooms, very handsomely furnished,—there is a sideboard in one of them, but it is very handsome and has very hand-

some decanters and cut-glass water-jugs upon it, she has a very handsome carriage, and a very handsome free black coachman; she is always very handsomely dressed; and, moreover, she is very handsome herself. She rises, and her first hour is spent in the scrupulously nice arrangement of her dress; she descends to her parlour, neat, stiff, and silent; her breakfast is brought in by her free black footman; she eats her fried ham and her salt fish, and drinks her coffee in silence, while her husband reads one newspaper and puts another under his elbow; and then, perhaps, she washes the cups and saucers. Her carriage is ordered at eleven; till that hour she is employed in the pastry-room, her snow-white apron protecting her mouse-coloured silk. Twenty minutes before her carriage should appear, she retires to her chamber, as she calls it, shakes and folds up her still snow white apron, smooths her rich dress, and with nice care, sets on her elegant bonnet, and all the handsome *et cetera*; then walks down stairs, just at the moment that her free black coachman announces to her free black footman that the carriage waits. She steps into it, and gives the word, 'Drive to the Dorcas Society.' Her footman stays at home to clean the knives, but her coachman can trust his horses while he opens the carriage door, and his lady, not being accustomed to a hand or an arm, gets out very safely without, though one of her own is occupied by a work basket, and the other by a large roll of all those indescribable matters which ladies take as offerings to Dorcas societies. She enters the parlour appropriated for the meeting, and finds seven other

* These remarks are especially justified by the eagerness which the periodical referred to has recently manifested in condescending to accept the favour of the proof-sheets of two 12mo. volumes on the "Domestic Manners of the Americans," by a Mrs. Trollope. The "whipper-in" of the Quarterly has usually been very unfortunate in committing the review of works on the United States to persons as ignorant of facts, as they have been bold in assertion; a circumstance perhaps arising from the contempt in which "our late colonies" are still held, so that they are committed to the charge of the most inferior members of the conclave; or possibly the articles may have been written by an underling at half-price, while the principal has been in attendance at "Charles-street." However this may be, in one of their late reviews, while attempting to enlighten the public on the subject of the American navy, they are pleased to inform them, that, for some sinister purpose of deception, "the order of congress for building their ships limited their size to that of seventy-fours;" whereas the law, or order, as he pleases to term it, was just the contrary—"that the president of the United States is hereby authorized to cause to be built nine ships, to rate *not less than* seventy-four guns each:"—and in the number just published, in the prefatory remarks to the review of the work which contains "exactly the title-page they have long wished to see," we are gravely informed, as a most important fact, that "in fully *four fifths* of the settled portion of the United States, the labouring population consists of slaves," which is just as true as that "fully four fifths" of the talent of England is connected with the Quarterly Review. Lest we should by possibility mistake, in a few lines we are again informed, that it is "an *undoubted*

ed fact, that over the most fertile, and, in other respects, the most wealthy portion of the union, the working population consists of negro slaves!"—*Quarterly Review*, for March, p. 41. Now, as out of thirteen millions of inhabitants, there happen to be about two millions of slaves, it will follow that, if four fifths of the working classes are slaves, at least ten millions out of thirteen do not work in America! and that, with the exception of the unfortunate blacks, there are little more than half a million of persons only who can be numbered among the "working population;" consequently, that the remaining nearly ten and a half millions have that special feature of aristocracy and gentility—that they do not work for their living. We can readily conceive how such a writer may conscientiously affirm, that he has read Mrs. Trollope's book with "instruction," and that he could bestow upon it "high praise." We trust we shall be deemed to have established the grave charge of ignorance, and of boldness too. Of the latter quality (tinged, indeed, with the former also) we must give one more example:—"the total absence of a national debt" (which is not a fact) is affirmed to be an evil! See *Quarterly Review*, p. 44, which asserts, that "Many persons consider that, as to this point of dissimilarity, the advantages lie entirely with the Americans. We are not of that opinion." We apprehend, that after these specimens, and more might be added, the opinions of the writer in the Quarterly will not add much weight to Mrs. Trollope's book: we shall therefore leave the enamoured reviewer, and this "*lady of sense and acuteness*," except so far as their observations may illustrate some portions of the subject under consideration.

ladies, very like herself, and takes her place among them; she presents her contribution, which is accepted with a gentle circular smile, and her parings of broad-cloth, her ends of ribbon, her gilt paper, and her minikin pins, are added to the parings of broad cloth, the ends of ribbon, the gilt paper, and the minikin pins, with which the table is already covered; she also produces from her basket three ready-made pin-cushions, four ink-wipers, seven paper matches, and a pasteboard watch-case; these are welcomed with acclamations, and the youngest lady present deposits them carefully on the shelves, amid a prodigious quantity of similar articles. She then produces her thimble, and asks for work; it is presented to her, and the eight ladies all stitch together for some hours. Their talk is of priests and of missions; of the profits of their last sale, of their hopes from the next; of their doubt whether young Mr. This, or young Mr. That, should receive the fruits of it to fit him out for Liberia; of the very ugly bonnet seen at church on Sabbath morning, of the very handsome preacher who performed on Sabbath afternoon, and of the very large collection made on Sabbath evening. This lasts till three, when the carriage again appears, and the lady and her basket return home: she mounts to her chamber, carefully sets aside her bonnet and its appurtenances, puts on her scolloped black silk apron, walks into the kitchen to see that all is right, then into the parlour, where, having cast a careful glance over the table prepared for dinner, she sits down, work in hand, to await her spouse. He comes, shakes hands with her, spits, and dines. The conversation is not much, and ten minutes suffices for the dinner; fruit and toddy, the newspaper and the work-bag, succeed. In the evening the gentleman, being a *savant*, goes to the Wister society, and afterwards plays a snug rubber at a neighbour's. The lady receives at tea a young missionary and three members of the Dorcas Society, and so ends her day.* And who, we say, is most happy—this lady at Philadelphia, or one in Marylebone, who, be the morning ever so beautiful, dares not be so vulgar as to order her carriage before two in the afternoon, then drives in Hyde Park, to be quizzed by all the dandy rakes that infest the place, and in the evening goes to Drury Lane, weeps at a tragedy, instead of compassionating real distress, and then remains till midnight to witness performances which nine American children out of ten would be ashamed to waste their time in? Let Mrs. Trollope, and her pious friend the Quarterly Review, who is so overwhelmed with the “disgusting

and mischievous exhibition” of an American revival of religion, solve the question.—If domestic duties, and the claims of benevolence, are thus attended to by those of high repute, we need not say that in the less wealthy class they are equally so. In all countries, *they* are allowed to be so unfashionable as to be virtuous. “It should be remembered,” says the author of *Notions of the Americans*, “that when an American girl marries, she no longer entertains the desire to interest any but her husband. There is perhaps something in the security of matrimony that is not very propitious to female blandishments, and one ought to express no surprise that the wife who is content with the affections of her husband should grow a little indifferent to the admiration of the rest of the world. One rarely sees married women foremost in the gay scenes. They attend, as observant and influencing members of society, but not as the principal actors. It is thought that the amusements of the world are more appropriate to the young, who are neither burdened nor sobered with matrimonial duties, and who possess an inherent right to look about them in the morning of life, in quest of the partner who is to be their companion to its close.”

One of the differences between European and American manners which strikes the traveller, especially the English, most forcibly, relates to the independence of servants of all kinds. We believe that antipathy to domestic service is carried to an unjustifiable excess; and for once the Quarterly speaks the truth, with but little exaggeration, when it says, “One of the greatest drawbacks to comfort in America appears to consist in the difficulty—almost impossibility—of getting good servants. There exists throughout the country such an inveterate prejudice against menial service, that nothing short of absolute want, or the strong desire of procuring some favourite object for which the funds are not forthcoming, will induce man, woman, or even child, to condescend to this sort of occupation.” It is perfectly amusing, however, to perceive how the writer exhibits the superior condition of servants in this country—he surely must suppose that his readers are ignorant of themselves and of each other, as well as of the affairs of the United States, when he thus writes: “It is in vain to reason with an American on this subject, or to endeavour to show him that if a servant makes his bargain, and does his duty, he is, to all intents and purposes, as independent as his master. It is true that this holds good, in its fullest extent, only in a country like England, where, happily for the poorer classes, the society is divided into ranks, of each of which the rights and privileges are distinctly known,

* *Domestic Manners of the Americans*, vol. ii. pp. 72.—75.

and resolutely maintained. We say, decidedly, that this classification is fortunate for those who are less—aye, or least wealthy, as it affords by far the best security they could have against the encroachments of power. Let any gentleman in England treat his servant unjustly or cruelly, and see what a storm he will soon raise about his ears. If, on the other hand, he forgets what is due to his own rank, and even, with a kindly intention, takes any liberty with his servant, he is instantly checked for what, though it be not so called, is considered presumption. The truth is, neither master nor man can venture, with us, to quit his own proper line of duty; and as for obligation, that is strictly mutual, and finds its balance most accurately adjusted by the payment of wages. There are a few, but very few, masters in England who treat their *domestic* servants on these principles: we should say from our own observation, that servants in England are treated much more haughtily than they are in France, and, from competent testimony, we may add, than in any other nation in Europe, except in the dominions of the autocrat of the north. For our own parts, we can see no reason why a domestic servant should not as civilly be asked to perform what may be required, as any tradesman who may be employed; nor why he should not be thanked when he has done his duty willingly. It appears to us, that the disagreeable feelings of the English in the United States, arise, in great measure, from the fact, that each class of English society from the duke to the dustman, is infected with a most contemptible infusion of aristocratic feeling: none so much so, perhaps, as the domestic servants in high life themselves; and from whence they derive the infection is sufficiently manifest. At the same time, we willingly admit that there are more exceptions to this observation among the old nobility than among any other class, and, we may add, fewer among the uneducated, who, by successful traffic, have raised themselves to civic honours.

Friendly and social intercourse, both of a private and public character, exists in the United States in a far higher degree than the present state of Great Britain will now permit to its inhabitants; and the habit of rising early in the morning, and leaving off business early in the evening, tends very much to promote social intercourse, without infringing on other engagements. It is true, in that intercourse, some practical good is generally kept in view; there is often more introduced of mutual improvement in literature or sciences than would please the genteel youth of England, who leave such matters to mechanics' institutions: and, perhaps, there is more of religion in many of their social meetings

than would be agreeable to many of the members of our churches, who, whatever their profession may be, practically appear to consider religion a species of hebdomadal lunacy, the fit asylum for which is a church or chapel: on one day it is all-important—of eternal moment—(the orthodox Quarterly admits this;) but on all other days, to think—to feel—to speak or read about it, especially in company, is “disgusting,” “mischievous,” “profane,” not to say, “blasphemous,” with the Quarterly; and “imprudent,” “unseasonable,” “injudicious,” in the estimation, or, at any rate, inconsistent with the practice, of a large proportion of professing christians.

With respect to “the freedom of intercourse which is admitted between the young of the two sexes in America, and which undeniably is admitted with impunity, “it is to me,” says Mr. Cooper, “perfectly amazing. That the confidence of parents is sometimes abused in America, is, probably, just as true as it is that their watchfulness is sometimes deceived in Europe; but the intelligence, the high spirit, and the sensitiveness of the American, (who must necessarily be a party to any transgressions of the sort,) on the subject of female reputation, is, in itself, sufficient proof that the custom is attended with no general inconvenience. The chief reason why the present customs can exist without abuse, is no doubt owing to the fact that there is no army, nor any class of idlers, to waste their time in dissolute amusements. Something is, also, due to the deep moral feeling which pervades the community, and which influences the exhibition of vice in a thousand different ways. The language of gallantry is never tolerated: a married woman would conceive it an insult, and a girl would be exceedingly apt to laugh in her adorer's face. I do not mean to say that idle pleasantries, such as are mutually understood to be no more than pleasantries, are not sometimes tolerated; but an American female is exceedingly apt to assume a chilling gravity at the slightest trespass on what she believes, and, between ourselves, rightly believes, to be the dignity of her sex. Here, you will perceive, is a saving custom, and one, too, that it is exceedingly hazardous to infringe, which diminishes one half of the ordinary dangers of the free communication between the young of the two sexes. There is another peculiarity in American manners that should be mentioned: the women of America, of all classes, are much more reserved and guarded in their discourse, at least in presence of our sex, than even the women of the country whence they derive their origin. I think, at all events, no intelligent traveller, can journey through this country without being

struck by the singular air of decency and self-respect which belongs to all its women, and no honest foreigner can deny the kindness and respect they receive from the men. There is something repugnant to the delicacy of American ideas in permitting a lady to come, in any manner, in contact with the world. A woman of almost any rank above the labouring classes is averse to expose herself to the usual collisions, bargainings, &c., of ordinary travelling. Thus, the first thing that an American woman requires to commence a journey, is a suitable male escort; the very thing that with us would be exceptionable.

"Marriages in the United States," says Mr. Bristed, "are earlier than in Europe, there being no constraint by statute, and no fear of not being able to maintain a family in so young a country, whose extensive territory offers an abundant provision to every species of industry, when regulated by discretion. Any clergyman of any sect, or any justice of the peace, may marry any couple without asking any questions. For all the purposes of connubial happiness, early marriages are best fitted, because the youthful pair have time, and opportunity, and power, gradually to mould themselves to each other's temper and disposition and habits and manners; whereas, later marriages require much good temper, good sense, and, above all, confirmed domestic habits on both sides, to render the union happy; because the character of both parties is already fixed, and not capable of that flexible adaptation to the circumstances of life, so characteristic of ardent and ingenuous youth. Marriages in the United States are not only contracted at an early age, but, in general, from disinterested motives. Indeed, owing to our social institutions and habits, individual fortunes are seldom sufficiently large, compared with the overgrown family opulence of Europe, to induce mere money matches, where the estates, not the parties, are united. There is no fear with us of the proverb, so commonly levelled in England against sentimental affection, that 'love in a cottage generally ends in a cottage without love;' because any man, in any calling, if he be industrious, honest, and careful, may make ample provision for his wife and children."

The Americans are not without opportunities of exercising their social feelings upon an extended scale. Their religious associations are certainly the chief scene in which these affections find objects on which to fix themselves. Indeed, in the west, especially at Cincinnati, the people are, according to Mrs. Trollope, completely without amusement. Billiards and cards are forbidden by law—they have no

public balls, except a few at Christmas; and, in fact, it would appear that the only chance of social enjoyment for the good lady was at a prayer-meeting, which she appears to view with as much horror as she would a select party of convicts. The following is her mode of giving the testimony of an enemy to a most pleasing fact: "It is in the churches and chapels of the town that the ladies are to be seen in full costume; and I am tempted to believe that a stranger from the continent of Europe would be inclined, on first reconnoitring the city, to suppose that the places of worship were the theatres and cafes of the place. No evening in the week but brings throngs of the young and beautiful to the chapels and meeting-houses, all dressed with care, and sometimes with great pretension: it is there that all display is made, and all fashionable distinction sought. The proportion of gentlemen attending these evening meetings is very small, but often, as might be expected, a sprinkling of smart young clerks makes this sedulous display of ribands and ringlets intelligible and natural. Were it not for the churches, indeed, I think there might be a general bonfire of best bonnets, for I never could discover any other use for them. The ladies are too actively employed in the interior of their houses to permit much parading in full dress for morning visits. There are no public gardens or lounging-shops of fashionable resort; and were it not for public worship, and private tea-drinkings, all the ladies in Cincinnati would be in danger of becoming perfect recluses." Notwithstanding these observations of Mrs. T. it is a fact that the theatres in the eastern cities are well attended; but it is also a fact, that they are very differently conducted from the theatres of London, and that certain parties who are here admitted free, as attractions to the theatre, would, even in New York, if known, not be suffered to enter the house: and yet we believe the finances of American theatres are generally tolerably prosperous, while those of the great theatres of London are in utter ruin.

Respecting dress, Mr. Cooper says, "I think the secondary classes in this country dress more, and those of the upper less, than the corresponding castes in Europe. The Americans are not an economical people in one sense, though instances of dissolute prodigality are exceedingly rare among them. A young woman of the middling classes, for instance, seldom gives much of her thoughts towards the accumulation of a little dowry; for the question of what a wife will bring to the common stock is agitated much less frequently here than in countries more sophisticated. The facility with which the fabrics of every

country in the world are obtained, the absence of care on the subject of the future, and the inherent elevation of character which is a natural consequence of education, and a consciousness of equal rights, cause all the secondary classes of this country to assume more of the exterior of the higher, than it is common to see with us. The exceptions must be sought among the very poorest and most depressed members of the community. The men, who are no where so apt at imitation as the other sex, are commonly content with garments that shall denote the comfort and ease of their several conditions in life; but the females are remarkable for a more aspiring ambition. Even in the country, though rusticity and a more awkward exterior were as usual to be seen, I looked in vain for those marked and peculiar characteristics of dress and air that we meet in every part of Europe. In but one instance do I remember to have seen any number either of men or women whose habiliments conveyed an idea of provincial costume. The exception was among the inhabitants of a little Dutch village, in plain view of this city, who are said to retain no small portion of the prejudices and ignorance of the seventeenth century, and whom the merry author of the burlesque history of New York accuses of believing they are still subject to the power of the United Provinces. As respects the whole of New England, I saw some attempt at imitating the fashion of the day, in even the humblest individual, though the essay was frequently made on a material no more promising than the homely product of a household manufacture. In the towns, the efforts were, of course, far more successful; and I should cite the union of individuality of air with conformance to custom as a distinguishing feature of the women of the lower classes here. As I stood regarding the mixed assembly before me, I had the best possible illustration of the truth of what I will not call the levelling, for elevating is a far better word, effects of the state of society, which has been engendered by the institutions and the great abundance of this country. Of some three thousand females present, not a sixth of the whole number, perhaps, belonged to those classes, that, in Europe, are thought to have any claims to compose the *elite* of society; and yet so far as air, attire, grace, or even deportment, were concerned, it must have been a sickly and narrow taste indeed that could have taken exceptions."

The manners of the Americans, in the lighter sense of the term, may be truly stated to be a medium between the vulgarity of the lower orders, and the refinement of the highest class of European society; and there are some features of the latter as

desirable to be omitted as of the former. The blustering scion of an aristocratic house may be excused for terming the manly independence of the Americans impertinence; and for dying of a broken heart, because after swearing at a Yankee, as the southern democrats do at their negroes, he is left to carry his trunk a mile through the broiling sun himself. We know of no obligation that rests on a porter to carry a marquess's trunk, if it does not suit his convenience; but perhaps a majority of the house of lords would be of opinion, that a month at the tread-mill would be a fit compensation to the porter for such an exercise of the freedom of the locomotive faculty. We make these observations not from the slightest disrespect to the aristocracy of England, but only to exhibit plainly some points in which the ideas of the English and Americans come in rather violent contact—doubtless materially to the disadvantage of the latter. There are some points, however, which do not admit of so ready a solution as that of the spirit of independence. One circumstance peculiarly felt by most travellers, especially in the eastern states, is a coldness of manner, which, to a European, appears like indifference or apathy. We have felt the unpleasantness of it ourselves, with one or two exceptions only, in the American gentlemen to whom we have had the pleasure of being introduced: we have, however, invariably found it to be mere manner; and consequently, by being accustomed to it, all unpleasant feelings cease to be excited. There is, however, one custom among the Americans, to which we apprehend English travellers, or emigrants, must feel an insuperable repugnance—the habit of chewing tobacco and spitting, which, though diminishing, still prevails to a considerable extent through the middle class of society. We must join in the unqualified condemnation of a custom so revolting, notwithstanding the plea that it is very improving to the quality of Turkey carpets. To the practice of lolling in chairs as though they were rocking-chairs, we see not so much objection, provided due skill be always exercised to keep clear of the legs of neighbouring parties.

The influence of republican institutions on the general appearance of society is observable, not only in the spirit of individual independence and energy it communicates, but also in the absence of many of the titles and gorgeous equipages which are common in Europe. Still a great number of carriages are kept, and a great number of titles are acquired by holding office. The use of *esquire* to gentlemen, *honourable* to members of congress and public officers, *excellency* to governors, causes every public

meeting to be crowded with titles. Others, which are despised or declined in Europe, are closely adhered to in America. The shopkeeper, or mechanic, who has combined with his trade a commission in the militia, continues to be styled major or colonel, not only during its tenure, but for the rest of his life. The same is the case with the civil functions of judge and magistrate, and even with the ecclesiastical one of deacon. In regard to the titles of Mr. and Mrs. equality is maintained, not by their disuse, but by applying them equally to all, even labourers and beggars: they cease thus to form any distinction. The negroes "*Sir*" and "*Madam*" each other continually; and know no other order amongst themselves than that of "gentlemen" and "ladies."

If ready resentment, and willingness to fight, is to be taken as the most decisive mark of a man of honour and a gentleman, the Americans, notwithstanding tobacco, &c., bear the palm from the best shots in Europe; for not only are their duels more numerous, but much more indicative of perfect sincerity by their result: while, of late especially, the rencounters of Europe have been of so friendly a character, as to reduce the transaction from a tragedy to a farce—giving hope that such proceedings will soon be left to children, with their sixpenny guns and broken tobacco pipes. The practice is, we believe from a very different cause—the moral force of public opinion, on the decline in the United States; and it would be well if a nation, who can justly boast of its efforts to prevent privateering, could triumph in the abolition of the no less dishonourable practice of duelling. As to the stories of Kentucky drinking and gorging, the combined effects of knowledge and civilization have left them only to the page of history, from which the hand of charity will willingly blot them out.

It remains for us to notice some sectional distinctions of character which may be perceived. The northeastern states, from Maine to Pennsylvania, and the northwestern, Ohio, Indiana, and Illinois, that are free from slavery, (the one fifth of the Quarterly,) have, in consequence, a characteristic peculiar to themselves. But the subject of slavery, as well as the Indians, we propose to notice in the next chapter; and we shall here refer to the three divisions of the country into northeastern, northwestern, and southern, as it respects their general manners. The first section contains the chief seats of learning, of commerce, and of arts; and is esteemed the most money-getting and most enterprising portion of the union, although some of the states in the others are vying with the eastern. The manners of this section are more cold and reserved than those of the south and

west. The planters of the south are represented as a liberal, almost prodigal, race of men, but as being by no means in such princely circumstances as formerly. It is one of the wise allotments of the Ruler of the world, that what is wrongfully taken from the labourer should not long remain a benefit to the oppressor; and the slave-master, be he individually ever so benevolent, stands in the *relation* of an oppressor to the slave. The splendid and princely fortunes which some of the planters possessed are reduced within much narrower limits; indications of which, Basil Hall informs us, were very manifest in the race-course at Charleston, where these noble supporters of the turf were no longer to be found. While speaking of the southern section, it is necessary to observe, that the states of Mississippi, Louisiana, and Florida, having been of French or Spanish origin, differ materially from the other states; but that distinction is being rapidly obliterated by the tide of emigration which incessantly flows into the new states. The western states, from their recent settlement, are, of course, behind the eastern in literature and the arts; but they press rapidly onward, and are daily increasing in physical, intellectual, and moral power. The abundance of provision for all animal wants encourages a degree of hospitality, and ensures a security, unknown to modern Europe. Mrs. Trollope found herself in danger of giving offence by fastening her door, as it might be construed to indicate some suspicion of the honesty of her neighbours.

We shall now mention one characteristic of American society, which, to a benevolent mind, will compensate for many trivial privations—there are no beggars. What can be more appalling and depressing to the mind, than the sight of hundreds of miserable objects sweeping pathways across the streets, to afford a pretext for soliciting alms; besides hundreds of vagrants committed to prison every month to clear the streets, many of whom gladly accept the shelter of the jail; and this in a country where, according to the Quarterly, "*happily for the poorer classes, society is divided into ranks, of each of which the rights and privileges are distinctly known and resolutely maintained?*" Noble right!—inalienable privilege—of being sent to bridewell for one month,—liberated for one day,—and then returned there for a second period! But what is this hopeless wretchedness,—this perpetual memento of the miserable condition of human beings, in comparison with the calamity of meeting hogs in the streets and vicinity of Cincinnati? Poor Mrs. Trollope! "Immense droves of them were continually arriving from the country, by

the road that led to most of our favourite walks; they were often fed and lodged in the prettiest valleys, and, worse still, were slaughtered beside the prettiest streams. Another evil threatened us from the same quarter, that was yet heavier: our cottage had an ample piazza, (a luxury almost universal in the country houses of America,) which, shaded by a group of acacias, made a delightful sitting-room. From this favourite spot we one day perceived symptoms of building in a field close to it; with much anxiety we hastened to the spot, and asked what building was to be erected there. "'Tis to be a slaughter-house for hogs,' was the dreadful reply. As there were several gentlemen's houses in the neighbourhood, I asked if such an erection might not be indicted as a nuisance. 'A what?' 'A nuisance,' I repeated, and explained what I meant. 'No, no,' was the reply; 'that may do very well for your tyrannical country, where a rich man's nose is more thought of than a poor man's mouth; but hogs be profitable produce here, and we be too free for such a law as that, I guess.'" How delighted would thousands of Mrs. Trollope's fellow-subjects have been, to have come in contact with such a "nuisance" as plenty of good bacon, at twopence per pound, and plenty of labour to earn the cents to purchase it wherewithal!

Before we close this chapter, we shall notice one more point in the characteristics of American society, because it will confute, we believe, one of the grossest and most calumnious falsehoods that even the *Quarterly*, with the "long-wished-to-see" help of Mrs. Trollope, could possibly concoct. In connexion with the awful calamity of the hogs, Mrs. T. remarks:—"The well-disposed, those who own the feeling of justice would prevent their annoying others, will never complain of the restraints of the law. *All the freedom enjoyed in America, beyond what is enjoyed in England, is enjoyed solely by the disorderly at the expense of the orderly.*" "We have taken the liberty," says the writer in the *Quarterly*, "of putting the concluding remark of the above paragraph in italics, for we desire greatly to call the attention of our readers to a truth which has not before been so distinctly pointed out, but which every page of these interesting volumes, and, indeed, of every other book which we have read respecting America, tends to confirm. We conceive that the inevitable consequence of extending the democratical principle beyond what used to be considered its due limits, must be to degrade the cause of genuine freedom, and even essentially to diminish the amount of personal liberty in any country. In America there

is ample license, with all sorts of liberty of action and speech—but only for one class of society—the democrats; scarcely a particle, it would seem, for any of the rest. It is true, the democrats form the majority, and a very large majority indeed, not only counted numerically, but reckoned by the scale of influence and intelligence, wealth, talents, or any other element of recognised power elsewhere. Then why find fault with it? we may be asked; why, if the system is such as the great body of the people, including the richest, wisest, and best, choose to prefer, why should we quarrel with them for persevering in what they approve of? To this we reply, that we have no quarrel with them about it at all. We are in no way disposed to begrudge them their universal suffrage—their general dram-drinking—their occasional camp-meetings—their republican institutions—their eternal electioneering, or any thing else which may to them seem fit and proper. But we must take the liberty to point out to our countrymen, that, although this may be all very well for the Americans, (since they like it,) nothing can be more utterly repugnant to the feelings and habits of Englishmen, or more completely unsuited to the geographical, statistical, and moral situation in which this country is placed." A very grand superstructure, truly, to be raised on the foundation of Mrs. Trollope's reflections on a slaughter-house for hogs!—when, in fact, it so happens, that the civic order of American cities, so far as the permission of the disorderly to enjoy themselves at the expense of the orderly is concerned, is as far superior to that of English towns, as are the means of existence of the bulk of their population. If the editor of the *Quarterly* doubts this in sober seriousness, let him send a few of his titled "Tom and Jerry" friends, and see whether they will be allowed to ring at the doors of the "orderly," knock down the charleys, and play up their pranks as they do in this land, where, "happily," all classes so well know and so resolutely maintain their rights. How, with the recently disordered state of the lower classes of the principal towns of Great Britain, and the notoriously orderly state of the American cities, any person capable of writing at all could be hired to write such falsehoods, would be beyond comprehension, if it were not evident that the dangerous "absurdity of comparing the two countries together,"* rendered at the present moment a bold game necessary, even at the risk of being inextricably placed in the condition of propounding a notorious and barefaced calumny.

* See *Quarterly Review*, vol. xlvii. p. 41.

CHAPTER IV.

INDIANS.

THERE are two very important circumstances connected with, and bearing forcibly on, the state of society in the United States—the practical effect of which it is by no means easy for a European correctly to appreciate. We refer to the presence, in most of the States, of some remains of the aboriginal race—the Indians; and in others, to the existence of, perhaps, a still more unfortunate race—the African negro, whether in a state of freedom, or of slavery. To a brief account of these two branches of the human family, as existing in the United States, and their influence in American society, political, and civil, we propose to devote the present chapter.

The fact of the aboriginal Indians still retaining possession of large portions of the soil in some of the states, in circumstances the most peculiar perhaps that ever occurred to any portion of the human race, has recently given rise to some of the most interesting discoveries which can possibly be presented to the view of the philosopher, the philanthropist, the civilian, or the statesman. In order that the subject may be adequately appreciated, it will be desirable to present a very brief outline of the physical, mental, and moral characteristics of the race; in doing which, we avail ourselves of what ought to be, and we believe is justly considered, standard authority on this and similar subjects,—the *Encyclopædia Americana*. With the exception, perhaps, of the Esquimaux, all the Indians have the same physical characteristics. The bronze or copper colour, the straight, coarse, black hair, the hazel eyes, the high cheek-bones and erect form, are common to them all. There is, in-

* Many writers, from Father La Hontan down to the present time, have discoursed more or less eloquently on the character of the Iroquois, or Five Nations. They have been emphatically called the Romans of the western world. Governor De Witt Clinton, in his admirable Address before the New York Historical Society, in 1811, thus speaks of the Confederates: an extract must suffice.

"A distinguished feature in the character of the Confederates, was an exalted spirit of liberty, which revolted with equal indignation at domestic or foreign control. 'We are born free,' (said Garangula, in his admirable speech to the governor general of Canada,) 'we neither depend on Ononthio or Corlear,' on France, or on England. Baron La Hontan, who openly avowed his utter detestation and abhorrence of them, is candid enough to acknowledge, that 'they laugh at the menaces of kings and governors, for they have no idea of dependence; nay, the very word is to them insupportable. They look upon themselves as sovereigns, accountable to none but God alone, whom they call the Great Spirit.' They admitted of no hereditary distinctions. The office of sachem was the reward of personal merit; of great wisdom, or commanding eloquence; of distinguished services in the cabinet or in the field. It was conferred by silent and general consent, as the spontaneous tribute due to eminent worth; and it could only be maintained by the steady and faithful cultivation of the virtues and ac-

complishments which procured it. No personal slavery was permitted: their captives were either killed or adopted as a portion of the nation. The children of the chiefs were encouraged to emulate the virtues of their sires, and were frequently elevated to the dignities occupied by their progenitors. From this source has arisen an important error with respect to the establishment of privileged orders among the Confederates.

"There is a striking similitude between the Romans and the Confederates, not only in their martial spirit and rage for conquest, but in their treatment of the conquered. Like the Romans, they not only adopted individuals, but incorporated the remnant of their vanquished enemies into their nation, by which they continually recruited their population, exhausted by endless and wasting wars, and were enabled to continue their career of victory and desolation; if their unhappy victims hesitated or refused, they were compelled to accept of the honours of adoption. The Hurons of the Island of Orleans, in 1656, knowing no other way to save themselves from destruction, solicited admission into the canton of the Mohawks, and were accepted; but, at the instance of the French, they declined their own proposal. On this occasion the Mohawks continued their ravages, and compelled acquiescence: they sent thirty of their warriors to Quebec, who took them away with the consent of the governor general; he, in fact, not daring to refuse, after having addressed him in the following terms of

complishments which procured it. No personal slavery was permitted: their captives were either killed or adopted as a portion of the nation. The children of the chiefs were encouraged to emulate the virtues of their sires, and were frequently elevated to the dignities occupied by their progenitors. From this source has arisen an important error with respect to the establishment of privileged orders among the Confederates.

"There is a striking similitude between the Romans and the Confederates, not only in their martial spirit and rage for conquest, but in their treatment of the conquered. Like the Romans, they not only adopted individuals, but incorporated the remnant of their vanquished enemies into their nation, by which they continually recruited their population, exhausted by endless and wasting wars, and were enabled to continue their career of victory and desolation; if their unhappy victims hesitated or refused, they were compelled to accept of the honours of adoption. The Hurons of the Island of Orleans, in 1656, knowing no other way to save themselves from destruction, solicited admission into the canton of the Mohawks, and were accepted; but, at the instance of the French, they declined their own proposal. On this occasion the Mohawks continued their ravages, and compelled acquiescence: they sent thirty of their warriors to Quebec, who took them away with the consent of the governor general; he, in fact, not daring to refuse, after having addressed him in the following terms of

Mississippi is another great Indian family, viz. the Sioux or Dahcotah. The Dahcotah proper inhabit the country on the west side of the Mississippi, north of the Wisconsin, to the sources of the Mississippi. Their territory extends westward to the Missouri. This tribe speak a language radically distinct from that of the Algonquin race. Their origin is unknown, and their own traditions are at variance on this point one with another. One account, and the most probable, represents them as having been driven from the confines of Mexico by the Spaniards. The branches of this tribe are the Winnebagoes, the Otoes, the Ioways, the Missouries, the Assinniboins, the Omahaws, the Kansas, and the Osages. All these tribes speak dialects of the Dahcotah tongue. The Assinniboins are known also by the names of Ossinneboins, Ossinnepoilles, Stone Indians, and Hohays. This last is the name they give themselves. The Otoes and Missouries, now united, are renowned among the tribes of the Missouries for their bravery. They can muster about 300 men. The Ioways still dwell on the Mississippi. They have from 100 to 200 men. The Osages are divided into three tribes, and can boast more than 1,000 warriors. The Kansas inhabit the plains about the heads of the Arkansas and Red rivers. Their number is unknown. The Omahaws live high up the Missouri. Besides these

proud defiance; which can not but bring to our recollection similar instances of Roman spirit, when Rome was free. 'Lift up thy arm, Ononchio, and allow thy children, whom thou holdest pressed to thy bosom, to depart; for if they are guilty of any imprudence, have reason to dread, lest in coming to chastise them, my blows fall on thy head.' Like the Romans, also, they treated their vassal nations with extreme rigour. If there were any delay in the render of the annual tribute, military execution followed, and the wretched delinquents frequently took refuge in the houses of the English, to escape from destruction. On all public occasions they took care to demonstrate their superiority and dominion, and at all times they called their vassals to an awful account, if guilty of violating the injunctions of the great council. At a treaty held on the forks of the Delaware, in 1758, by the governors of Pennsylvania and New Jersey, with the Six Nations, several claims of the Munseys, Wappings, and other Delaware Indians, for lands in the latter province, were adjusted and satisfied under the cognizance of the Confederates, who ordered them to deliver up their prisoners, and to be at peace with the English, and who assumed a dictatorial tone, and appeared to exercise absolute authority over the other Indians. At a former conference on this subject, a Munsey, or Minisink Indian, had spoken sitting, not being allowed to stand, until a Cayuga chief had spoken; when the latter thus expressed himself: 'I, who am the Mingoian, am by this belt to inform you, that the Munseys are women, and can not hold treaties for themselves; therefore I am sent to inform you, that the invitation you gave the Munseys is agreeable to us, the Six Nations.'

"War was the favourite pursuit of this martial people, and military glory their ruling passion. Agriculture, and the laborious drudgery of domestic life, were left to the women. The education of the savage was solely directed to hunting, and war. From his early infancy, he was taught to bend the bow, to point the arrow, to hurl the tomahawk, and to wield the club. He was instructed to pursue the footsteps of his enemies through the path-

tribes, there dwell on the Mississippi, between the river Des Moines, the Wisconsin and the Missouri, the Sacs and Foxes, a branch of the Chippeway tribe. They speak the Chippeway tongue, and number above 1,000 men. On the Missouri are the Pawnees, divided into three tribes, of which the Ari-karees are a branch. They live by hunting the buffalo, and are said to have a language of their own. The Mintarees or Bigbellies, the Mandans, the Crows, and the Blackfeet, also live on the Missouri, and each is said to have a language of its own. Their numbers are unknown. The Shoshonees live between the head waters of the Missouri and Columbia rivers. They are almost constantly on horseback, and are at war with the lower tribes of the Missouri. On the Columbia river are the Cohunnish, the Skilloots, Echeloots, Multnomahs, Clatrops, and other tribes. Their haunts and numbers are unknown. They live by fishing as well as hunting, and differ in manners and customs from the tribes east of the Rocky Mountains. They are neither so well fed nor clad. Most of these tribes have the practice of flattening the heads of infants between boards, whence the general name of Flat-heads. They have some commerce with ships on the northwest coast. Nothing is known of the languages of any of these people. In the south of the United States, there are four

less and unexplored forest; to mark the most distant indications of danger; to trace his way by the appearances of the trees, and by the stars of heaven, and to endure fatigue, and cold, and famine, and every privation. He commenced his career of blood by hunting the wild beasts of the woods, and after learning the dexterous use of the weapons of destruction, he lifted his sanguinary arm against his fellow creatures. The profession of a warrior was considered the most illustrious pursuit; their youth looked forward to the time, when they could march against an enemy, with all the avidity of an epicure for the sumptuous dainties of a Heliogabalus. And this martial ardour was continually thwarting the pacific counsels of the elders, and enthralling them in perpetual and devastating wars. With savages in general, this ferocious propensity was impelled by a blind fury, and was but little regulated by the dictates of skill and judgment; on the contrary, with the Iroquois, war was an art. All their military movements were governed by system and policy. They never attacked a hostile country, until they had sent out spies to explore and to designate its vulnerable points, and whenever they encamped, they observed the greatest circumspection to guard against surprise; whereas the other savages only sent out scouts to reconnoitre; but they never went far from the camp, and if they returned without perceiving any signs of an enemy, the whole band went quietly to sleep, and were often the victims of their rash confidence.

"Whatever superiority of force the Iroquois might have, they never neglected the use of stratagems; they employed all the crafty wiles of the Carthaginians. The cunning of the fox, the ferocity of the tiger, and the power of the lion, were united in their conduct. They preferred to vanquish their enemy by taking him off his guard; by involving him in an ambuscade; by falling upon him in the hour of sleep: but when emergencies rendered it necessary for them to face him in the open field of battle, they exhibited a courage and contempt of death which have never been surpassed."

tribes, viz. the Chickasaws, Choctaws, Cherokees, and Creeks. All these have made some progress in civilization. The Cherokees have a written and printed language, said to be radically different from all others. They number about 15,000 souls. The Choctaws and Chickasaws are each more numerous.

The Indians have hitherto uniformly resisted all attempts to civilize them, where they could support themselves by the chase. Some few tribes, such as the Southern Indians, and the remnants of the Six Nations, having been hemmed in by the whites, and circumscribed in their limits so as to be unable to live by hunting, have turned to agriculture for subsistence; but such a departure from the habits of savage life is not to be found where there has been a possibility of supporting life by other means. The hospitality of Indians is among their most striking qualities. In any of the tribes, a stranger is received with the utmost respect and attention. On his arrival he is served with the best in the wigwam, seated on the best seat, and treated with the utmost respect and attention. His person and property are considered sacred. He may remain as long as he pleases in a wigwam without any questions being asked, and retire unopposed. Feasts are made for him, and though his appetite may be satisfied, to refuse any thing set before him gives great offence. With all, or almost all, the Indian tribes, the sole care of the men is to provide food; the labour is the exclusive lot of the women. The use of the axe or hoe is considered beneath the dignity of the male sex. It belongs to the females to plant corn, to make and mend garments and moccasins, to build, to pitch tents, to cut wood, to bring water, to tend horses and dogs, and, on a march, to carry the baggage. The women do not murmur at this, but consider it a natural and equitable distribution of family cares. But they are regarded as an inferior race, and often transferred as property. Polygamy is general. Every man has as many wives as he can support, and, in marriages, the will of the bride is seldom or never consulted; a man addresses himself directly to the parents of his intended wife, and her fate depends on their will. The custom of dowry is reversed among the Indians; the man makes certain presents to the parents of his wife, instead of receiving a portion with her. The marriage ceremony is always very simple, and, in most tribes, there is none at all. Adultery is punished by cutting off the nose, or otherwise mutilating the offending female; sometimes, though rarely, with death: in some tribes, this crime is regarded as a venial fault, and in many the husband lends his wife to a friend without opposition

on her part. Divorces are frequent, and at the pleasure of the contracting parties: in such cases, the wife is usually left to provide for the children as she may. It is no uncommon thing to see an Indian woman who has been five or six times repudiated before she finally settles in life. In some tribes, especially those of Dahcotah origin, it is held the duty of each man to marry all the sisters of a family, and to have as many wives as he can support. In most tribes, and we believe in all, incest is held in abhorrence; and instances of devoted attachment are not uncommon. Every Indian submits in youth to a process of severe mental and corporeal discipline; during the course of which, frequent intervals of long and rigid abstinence are enjoined, by which the system is reduced, and the imagination rendered more susceptible. Dreams are then encouraged: by these the novice is taught both his duty and his destiny; and in them his guardian *manitou*, who is to protect him in life and attend him in death, appears in the shape of some familiar animal, thenceforth to be the object of his adoration. He is taught to despise death, and during his whole life he regards it with indifference. An Indian seldom commits suicide; not because the grave does not offer him a refuge, but because patience and fortitude are the first duties of a warrior, and none but a coward can yield to pain or misfortune. This sternness of purpose is another lesson early taught. He learns also to despise labour, to become a warrior, and a hunter, to associate the idea of disgrace with any other employment, and to leave to the women all the ordinary duties of life. He is a stern and unbending fatalist: whatever of good or of evil may happen, he receives it with imperturbable calmness. If misfortunes press upon him which he cannot resist, he can die; and he dies without a murmur. The opinions, traditions, and institutions of his own tribe, are endeared to him by habit, feeling, and authority; and from early infancy he is taught that the Great Spirit will be offended by any change in the customs of his red children, which have all been established by him. Reckless of consequences, he is the child of impulse; unrestrained by moral considerations, whatever his passions prompt he does. Believing all the wild and debasing superstitions which have come down to him, he has no practical views of a moral superintendence, to protect or to punish him. Government is unknown among them; certainly, that government which prescribes general rules, and enforces or vindicates them. The utter nakedness of their society can be known only by personal observation. The tribes seem to be held together by a kind of family ligament; by the

ties of blood, which, in the infancy of society, are stronger, as other associations are weaker. They have no criminal code, no courts, no officers, no punishments. They have no relative duties to enforce, no debts to collect, no property to restore. They are in a state of nature, as much as it is possible for any people to be. Injuries are redressed by revenge, and strength is the security for right.

All Indians of whom we have any knowledge, believe in one Supreme God, and the immortality of the soul. They attribute all good and all power to the Supreme Being. Many tribes also believe in the existence of an intelligent evil principle, whose ill offices they endeavour to avert by prayer and sacrifice. They never ask the Supreme for any thing, but merely return thanks for benefits received, saying, that he is the best judge of what is for their advantage. They believe in many subordinate deities, two of whom reside in the sun and moon. They attribute supernatural powers to all serpents, especially rattle-snakes, and will kill no animal of the genus. Even the eel escapes on account of its resemblance. They pay religious honours to rocks and venerable objects. They believe that brutes have immortal souls as well as men, and, in short, that all animated nature teems with spirits. In their belief sorcery is blended with the healing art, and their priests are also physicians and jugglers. These priests practise feats of sleight of hand with all their religious ceremonies; but, with a few exceptions, they have no power or influence over the multitude. The future state of the Indians is a material paradise, where they will follow the same occupations, and enjoy the same delights, they have experienced in this world. They have also a vague idea of future punishment for sins committed in the body. Among the superstitions of the Algonquin and Dahcotah tribes, is a very singular one: a man is sometimes devoted, by his parents or himself, to a life of ignominy. In this case, he dresses like a woman, and performs all female avocations; he associates with women only, and sometimes takes a husband; and he is held in utter contempt by all, though his condition be not of his own choice. This condition is frequently owing to a dream of his parents while he is yet unborn. In many tribes men have what they call their *medicine-bags*, which are filled with bones, feathers, and other rubbish; and to the preservation of their medicine-bags they attach much importance. Besides this, each holds some particular animal in reverence, which he calls his *medicine*, and can by no means be induced to kill, or to eat it when killed, for fear of some terrible misfortune. Moreover, the Indians leave tobacco,

worn-out clothing, and other articles, on rocks, as sacrifices to invisible spirits.

We believe it is impossible to estimate the number of the North American Indians with any degree of accuracy. It is, however, very small throughout, in proportion to the extent of their territory; for a hunting people can not be very numerous. Their wars, of which we have heard so much, do not materially affect them. They are carried on in detail by small parties, and, consequently, are not very destructive. They very seldom give quarter; but when a prisoner is spared, he is sure of being adopted by the conquering tribe. The tribes who inhabit the prairies go to war on horseback, and their weapons are spears and bows and arrows. Those who inhabit the forests are generally armed with guns. Their courage is moral and passive, rather than active. They think it cowardice to be affected by calamity, or to give way to passion or emotion. Though they have no laws, there are customs, which every individual scrupulously observes. In cases of murder, for instance, the rule is blood for blood, and the homicide rarely shuns the penalty of his deed. They have chiefs, but the power of these is limited to persuasion, and they can command no one. Sometimes a chief becomes such in virtue of his achievements in war, or his wisdom; in some tribes, there is something like hereditary rank; but even this authority does not descend in a direct line, the son of a chief being often set aside to make room for one more worthy. But in war, implicit obedience is given to the commands of a leader. The tribes that inhabit the prairies all live by hunting the buffalo, mostly on horseback; those who dwell in wooded countries hunt deer and smaller animals. The more primitive savages are the poorest, but at the same time the least dependent, for they have few wants, and can supply those few without assistance. Those who live nearer the whites have more of the comforts of life, but are no whit more civilized or more happy. We may say, that if the Indian trade of the Mississippi were interrupted for five years, all the aborigines of that quarter would be in danger of perishing, as they depend on the whites for clothing and weapons. The Indians can never be dangerous, as there is no union among them. On the whole, we may speak of them as a brave, reckless, generous, and unfortunate people.

Such is the race of human beings, who, from a remote period, occupied—we were going to say, but the term is inapplicable, and has occasioned serious misunderstandings on the subject,—ranged over the northern portion of this vast continent undisturbed, till mercantile adventure, or religious persecution,

brought to their shores the civilized inhabitants of Europe. The right of Europeans to take possession of the soil which formed the vast hunting province of these tribes, has given rise to much discussion. Had they, in any sense, fulfilled the purpose for which the earth was given to the children of men, it would have been difficult to establish a title to any kind of possession contrary to their consent. But to maintain that the fact of a tribe of 1,000 men passing and repassing through as many square miles of country, and destroying as many of its irrational occupants as might be deemed needful for their support, could give them just claim to have such territory considered exclusively their own, is more than we think the most zealous philanthropist will be willing deliberately to contend for. At the utmost, the only right they could have was to have a sufficiency of land to support them in their own way; and even this, perhaps, could scarcely be maintained in its fullest extent. Nearly this view of the subject, however, was taken by the English colonists; and consequently, with very few exceptions, full compensation to the Indians for their foregoing the right of scouring the country when they thought fit, was made upon terms settled with them as parties to a voluntary treaty. We do not intend to maintain that, in some instances, the aborigines were not unjustly or cruelly treated, but that the principle generally acted on was not unsound. The testimony of Vattel is,—“We cannot help praising the moderation of the English puritans, who first settled in New England,” (and he might have added, the first settlers of the other colonies,) “who, notwithstanding their being furnished with a charter from their sovereign, purchased of the Indians the lands they resolved to cultivate.”*

Whether, however, the space which the Indians had been accustomed to roam over in search of food was diminished by feud, fraud, or equitable agreement, the result to the native tribes was ultimately the same: it tended to limit the only means of subsistence of which they chose to avail themselves, and, consequently, to add to the wretchedness of their condition, and to diminish their numbers. “It is obvious,” says the writer of a long and able article on this subject in the *North American Review*, to which we shall have occasion to make frequent reference, “that the reduction or disappearance of the game, consequent upon the conversion of forests into fields, and the gradual advance of a civilized people, must have soon begun to press upon the means of subsist-

ence on which the Indians mainly depended. Other circumstances co-operated in the work of destruction. Fire-arms were introduced, and greatly facilitated the operations of the hunter. Articles of European merchandise were offered to the Indians, and they were taught the value of their furs, and encouraged to procure them. New wants arose among them: the rifle was found a more efficient instrument than the bow and arrow; blankets were more comfortable than buffalo robes; and cloth, than dressed skins. The exchange was altogether unfavourable to them: the goods they received were dear, and the peltry they furnished was cheap; a greater number of animals was necessary for the support of each family, and increased exertion was required to procure them. We need not pursue this subject further. It is easy to see the consequences, both to the Indians and their game. Herds of buffaloes were once found upon the shore of Lake Erie, and at the base of the Allegany mountains; they have now receded to the plains beyond the Mississippi, and are every year migrating still farther west. A few years since, they were unknown in the Rocky Mountains; they have now passed that barrier, and will ere long reach the Pacific. The beaver has nearly disappeared upon all our borders, and hunters and trappers have followed them to the waters of the Columbia. Even the common red deer, once so abundant, is rarely found east of the Allegany; and is becoming scarce in the western regions. But a still more powerful cause has operated to produce this diminution in the number of the Indians:—ardent spirits have been the bane of their improvement, and one of the principal agents in their declension and degradation. In this proposition we include only those tribes in immediate contact with our frontier settlements, or who have remained upon *reservations* guarantied to them. It has been found impracticable to prevent the sale of spirituous liquors to those who are thus situated: the most judicious laws are eluded or openly violated. The love of spirits and the love of gain conspire to bring together the buyer and the seller. As the penalties become heavier, and the probability of detection and punishment stronger, the prohibited article becomes dearer, and the sacrifice to obtain it greater. We shall not attempt to investigate the cause of the inordinate attachment displayed by the Indians to ardent spirits; it is probably without a parallel in all the history of man, and is certainly so with very few exceptions, in the whole range of their own society. This predisposition was the subject of observation and regret two centuries ago; and the earlier historians and travellers, while they furnish

* Vattel, book 1. chap. xviii.

the record of its existence, furnish also the evidence of its overpowering influence and destructive consequences. To the operation of the physical causes which we have described, must be added the moral causes connected with their mode of life and their peculiar opinions. Distress could not teach them providence, nor want industry. As animal food decreased, their vegetable productions were not increased. Their habits were stationary and unbending, never changing with the change of circumstances. There is a principle of repulsion in ceaseless activity, operating through all their institutions, which prevents them from appreciating or adopting any other modes of life, or any other habits of thought or action, but those which have descended to them from their ancestors.”*

That the aboriginal population should decrease under the operation of these causes, can excite no surprise. Whether the tribes upon this continent had attained the maximum of their population before its discovery by Europeans, we have not now the means of ascertaining; it is certain, however, as well from a consideration of their mode of life by Europeans, as from a careful examination of the earlier narratives, that greatly as they exceeded their present numbers, they were yet thinly scattered over the country. The ratio of diminution may have been greater or less; but there is no just reason to believe, that any of the tribes has been increasing in numbers at any period since they became known to Europeans. This opinion is expressed by the superintendents of Indian affairs, in the report submitted to Congress, at its last session, by the war department; and, from the favourable opportunities possessed by those officers of acquiring correct information upon this subject, their opinion must carry with it considerable authority. The whole amount of Indian population within the United States, east of the Mississippi, is estimated in this report at 105,060, and is divided as follows:

Within the states of Maine, Massachusetts, Rhode Island, Connecticut, and Virginia	2,573
The state of New York	4,820
Pennsylvania	300
North Carolina	3,100
South Carolina	300
Georgia	5,000
Tennessee	1,000
Ohio	1,877
Mississippi	23,400
Alabama	19,200
Indiana	4,050
Illinois	5,900
Territory of Michigan	29,450
Florida	4,000
	<hr/>
	105,060

* North American Review, vol. xxx. pp. 65—67.

It will be seen that, in the original states, the primitive stock has been reduced to 16,093 individuals, and that three fourths of the number now surviving in the whole of the vast country east of the river Mississippi, are found in the states of Alabama and Mississippi, and in the territory of Michigan, where the pressure upon them is now beginning to be felt, and will bring with it the usual process of diminution. In the same report, the number of Indians west of the Mississippi is thus estimated:

Between the Mississippi and the Rocky Mountains . . .	108,070
Within the ranges of the Rocky Mountains	20,000
West of the Rocky Mountains	80,000

Making a general aggregate of 313,130, within the United States, extending over twenty-four degrees of latitude and fifty-eight degrees of longitude. And these are the remnants of the primitive people, who, only two centuries ago, possessed this vast country, and who found in the sea, the lakes, the rivers, and the forests, means of subsistence sufficient for their wants.

From an early period, their rapid declension and ultimate extinction were foreseen and lamented, and various plans for their preservation and improvement were projected and pursued. Many of them were carefully taught at our seminaries of education, in the hope that principles of morality and habits of industry would be acquired, and that they might stimulate their countrymen by precept and example to a better course of life. Missionary stations were established among various tribes, where zealous and pious men devoted themselves, with generous ardour, to the task of instruction, as well in agriculture and the mechanical arts, as in the principles of morality and religion. The Roman Catholic church preceded the Protestant in this labour of charity; and the *Lettres Edifiantes* are monuments of her zeal and liberality. Unfortunately, they are monuments also of unsuccessful and unproductive efforts. What tribe has been civilized by all this expenditure of treasure, and labour, and care? From the martyrdom of Le Pere Brebeuf, in 1649, upon the shore of Lake Huron, to the death of the last missionary, who sacrificed himself in a cause as holy as it has proved hopeless, what permanent effect has been produced? Year after year sanguine anticipations have been formed, to be succeeded by disappointment and despondency. We are flattered with accounts of success, with explanations for the past, and hopes for the future; and this without the slightest intention to deceive. But the subject itself is calculated to excite these expectations. There are always individuals attending these establishments who give fair

promise of permanent improvement and usefulness. And as these prospects are blighted, others succeed to excite the same hopes, and to end in the same disappointment. The cause of this total failure can not be attributed to the nature of the experiment, nor to the character, qualifications, or conduct, of those who have directed it. The process and the persons have varied, as experience suggested alterations in the one, and a spirit of generous self-devotion supplied the changes in the other. But there seems to be some insurmountable obstacle in the habits or temperament of the Indians, which has heretofore prevented, and yet prevents, the success of these labours. Whatever this may be, it appears to be confined to the tribes occupying this part of the continent. In Mexico and South America, a large portion of the aboriginal race has accommodated itself to new circumstances, and forms a constituent part of the same society with their conquerors. Under the Spanish *regime* they existed as a degraded cast; but still they were sedentary, living under the protection of the laws, and providing by labour for their comfortable subsistence. In other parts of the continent, particularly in California and Paraguay, where the Spanish sway had but a nominal existence, the Jesuits succeeded in collecting the Indians into regular societies, in improving their morals and condition, and in controlling and directing their conduct. In the usual progress of conquest, where permanent possession is retained, the victors and vanquished become connected together, and if they do not form one people, they yet acknowledge obedience to the same laws, and look to them for protection. But from the St. Lawrence to the Gulf of Mexico, under the French, or British, or Spanish, or American rule, where is the tribe of Indians, who have changed their manners, who have become incorporated with their conquerors, or who have exhibited any just estimate of the improvements around them, or any wish to participate in them?

* The Indians are becoming philologists and grammarians, and exciting the wonder of the world, by the invention of letters. The invention of the Cherokee alphabet has excited the astonishment of the philosopher in this country and in Europe; but as I have not as yet seen any satisfactory account of the progress and history of this greatest effort of genius of the present day, I will state what I know of it, from the lips of the inventor himself.

In the winter of 1828, a delegation of the Cherokees visited the city of Washington, in order to make a treaty with the United States, and among them was See-quah-yah, the inventor of the Cherokee alphabet. His English name was George Guess; he was a half-blood; but had never, from his own account, spoken a single word of English up to the time of his invention, nor since. Prompted by my own curiosity, and urged by several literary friends, I applied to See-quah-yah, through the medium of two interpreters, one a half-blood, Capt. Rogers, and the other a full-blood chief, whose assumed English name was John Maw, to relate to

The following statement from Sherwood's Gazetteer of Georgia, published in 1827, gives a more favourable representation of the state of the Cherokees, than the writer in the North American Review will admit. "Within the last twenty years, the Cherokees have rapidly advanced towards civilization. They now live in comfortable houses, chiefly in villages, and cultivate large farms. They raise large herds of cattle, which they sell for beef to the inhabitants of neighbouring states. Many mechanical arts have been introduced among them. They have carpenters and blacksmiths, and many of the women spin and weave, and make butter and cheese. The population, instead of decreasing, as is the case generally with the tribes surrounded by the whites, increases very rapidly. There are now 13,563 natives in the nation; 147 white men and 73 white women have intermarried with them. They own 1277 slaves. Total, 15,060 souls. Increase in the last six years, 3,563. Their government is republican, and power is vested in a committee and council, answering to our senate and house of representatives. The members are elected once in two years. Newtown is the seat of government. Their judges act with authority, and prevent entirely the use of ardent spirits during the sessions of their courts. The mission at Spring Place was established in 1801. Since that time, nearly a dozen have been brought into operation in various parts of the nation. The number of children in the several missionary schools is nearly 500, all learning the English language."

In reference to this and similar statements, the Reviewer observes, "We are as unwilling to under-rate, as we should be to overrate, the progress made by these Indians in civilization and improvement. We are well aware, that the constitution of the Cherokees, their press, and newspaper, and alphabet,* their schools, and police, have sent through all our borders the glad tidings, that the long night of aboriginal ignorance was ended, and that the day of

me, as minutely as possible, the mental operations and all the facts in his discovery. He cheerfully complied with my request, and gave very deliberate and satisfactory answers to every question; and was at the same time careful to know from the interpreters if I distinctly understood his answers. No stoic could have been more grave in his demeanour, than was See-quah-yah; he pondered, according to the Indian custom, for a considerable time after each question was put, before he made his reply, and often took a whiff of his calumet, while reflecting on an answer. The details of the examination are too long for insertion; but the substance of it was this: That he, See-quah-yah, was now about sixty-five years old, but could not precisely say; that in early life he was gay and talkative; and although he never attempted to speak in council but once, yet was often, from the strength of his memory, his easy colloquial powers, and ready command of his vernacular, storyteller of the convivial party. His reputation for talents of every kind gave him some distinction when he was quite young, so long

knowledge had dawned. Would that it were so. None would rejoice more sincerely than we should. But this great cause can derive no aid from exagger-

ago as St. Clair's defeat. In this campaign, or some one that soon followed it, a letter was found on the person of a prisoner, which was wrongly read by him to the Indians. In some of their deliberations on this subject, the question arose among them, whether this mysterious power of the *talking leaf*, was the gift of the Great Spirit to the white man, or a discovery of the white man himself? Most of his companions were of the former opinion, while he as strenuously maintained the latter. This frequently became a subject of contemplation with him, afterwards, as well as many other things which he knew, or had heard, that the white man could do; but he never sat down seriously to reflect on the subject, until a swelling on his knee confined him to his cabin, and which at length made him a cripple for life, by shortening the diseased leg. Deprived of the excitements of war, and the pleasures of the chase, in the long nights of his confinement, his mind was again directed to the mystery of the power of *speaking by letters*; the very name of which, of course, was not to be found in his language. From the cries of wild beasts, from the talents of the mocking-bird, from the voices of his children and his companions, he knew that feelings and passions were conveyed by different sounds, from one intelligent being to another. The thought struck him to try to ascertain all the sounds in the Cherokee language. His own ear was not remarkably discriminating, and he called to his aid the more acute ears of his wife and children. He found great assistance from them. When he thought that he had distinguished all the different sounds in their language, he attempted to use pictorial signs, images of birds and beasts, to convey these sounds to others, or to mark them in his own mind. He soon dropped this method, as difficult or impossible, and tried arbitrary signs, without any regard to appearances, except such as might assist him in recollecting them, and distinguishing them from each other. At first, these signs were very numerous; and when he got so far as to think his invention was nearly accomplished, he had about two hundred characters in his alphabet. By the aid of his daughter, who seemed to enter into the genius of his labours, he reduced them, at last, to eighty-six, the number he now uses. He then set to work to make these characters more comely to the eye, and succeeded. As yet he had not the knowledge of the pen as an instrument, but made his characters on a piece of bark, with a knife or nail. At this time he sent to the Indian agent, or some trader in the nation, for paper and pen. His ink was easily made from some of the bark of the forest trees, whose colouring properties he had previously known; and after seeing the construction of the pen, he soon learnt to make one; but at first he made it without a slit; this inconvenience was, however, quickly removed by his sagacity. His next difficulty was to make his invention known to his countrymen; for by this time he had become so abstracted from his tribe and their usual pursuits, that he was viewed with an eye of suspicion. His former companions passed his wigwam without entering it, and mentioned his name as one who was practising improper spells, for notoriety or mischievous purposes; and he seems to think that he should have been hardly dealt with, if his docile and unambitious disposition had not been so generally acknowledged by his tribe. At length he summoned some of the most distinguished of his nation, in order to make his communication to them; and after giving them the best explanation of his discovery that he could, stripping it of all supernatural influence, he proceeded to demonstrate to them, in good earnest, that he had made a discovery. His daughter, who was now his only pupil, was ordered to go out of hearing, while he requested his friends to name a word or sentiment which he put down, and then she was called in and read it to them; then the father retired, and the daughter wrote; the Indians were wonder struck; but not entirely satisfied. See-quah-yah then proposed, that the tribe should select several youths from among their brightest young men, that he might communicate the mystery to them. This was at length agreed to, although there was some lurking suspicion of necromancy in the whole business. John Maw, (his Indian name I have forgotten,) a full-blood, with several others, were selected, for

rated representations; from promises never to be kept, and from expectations never to be realized. The truth must finally come, and it will come with

this purpose. The tribes watched the youths for several months with anxiety; and when they offered themselves for examination, the feelings of all were wrought up to the highest pitch. The youths were separated from their master, and from each other, and watched with great care. The uninitiated directed what the master and pupil should write to each other, and these tests were varied in such a manner, as not only to destroy their infidelity, but most firmly to fix their faith. The Indians, on this, ordered a great feast, and made See-quah-yah conspicuous at it. How nearly is man alike in every age! Pythagoras did the same on the discovery of an important principle in geometry. See-quah-yah became at once school-master, professor, philosopher, and a chief. His countrymen were proud of his talents, and held him in reverence as one favoured by the Great Spirit. The inventions of early times were shrouded in mystery. See-quah-yah disdained all quackery. He did not stop here, but carried his discoveries to numbers. He of course knew nothing of the Arabic digits, nor of the power of Roman letters in the science. The Cherokees had mental numerals to one hundred, and had words for all numbers up to that; but they had no signs or characters to assist them in enumerating, adding, subtracting, multiplying, or dividing. He reflected upon this until he had created their elementary principle in his mind; but he was at first obliged to make words to express his meaning, and then signs to explain it. By this process he soon had a clear conception of numbers up to a million. His great difficulty was at the threshold, to fix the powers of his signs according to their places. When this was overcome, his next step was in adding up his different numbers in order to put down the fraction of the decimal; and give the whole number to his next place. But when I knew him, he had overcome all these difficulties, and was quite a ready arithmetician in the fundamental rules. This was the result of my interview; and I can safely say, that I have seldom met a man of more shrewdness than See-quah-yah. He adhered to all the customs of his country; and when his associate chiefs on the mission assumed our costume, he was dressed in all respects like an Indian. See-quah-yah is a man of diversified talents; he passes from metaphysical and philosophical investigation to mechanical occupations, with the greatest ease. The only practical mechanics he was acquainted with, were a few bungling blacksmiths, who could make a rough tomahawk, or tinker the lock of a rifle; yet he became a white and silver smith, without any instruction, and made spurs and silver spoons with neatness and skill, to the great admiration of people of the Cherokee nation. See-quah-yah has also a great taste for painting. He mixes his colours with skill; taking all the art and science of his tribe upon the subject, he added to it many chemical experiments of his own, and some of them were very successful, and would be worth being known to our painters. For his drawings he had no model but what nature furnished, and he often copied them with astonishing faithfulness. His resemblances of the human form, it is true, are coarse, but often spirited and correct; and he gave action, and sometimes grace, to his representations of animals. He had never seen a camel hair pencil, when he made use of the hair of wild animals for his brushes. Some of his productions discover a considerable practical knowledge of perspective; but he could not have formed rules for this. The painters in the early ages were many years coming to a knowledge of this part of their art; and even now they are more successful in the art than perfect in the rules of it. The manners of the American Cadmus are the most easy, and his habits those of the most assiduous scholar, and his disposition is more lively than that of any Indian I ever saw. He understood and felt the advantages the white man had long enjoyed, of having the accumulations of every branch of knowledge, from generation to generation, by means of a written language, while the red man could only commit his thoughts to uncertain tradition. He reasoned correctly, when he urged this to his friends as the cause why the red man had made so few advances in knowledge in comparison with us; and to remedy this was one of his great aims, and one which he has accomplished beyond that

a powerful reaction. We hope that our opinion upon this subject may be erroneous. But we have melancholy forebodings. That a few principal men, who can secure favourable cotton lands, and cultivate them with slaves, will be comfortable and satisfied, we may well believe. And so long as the large annuities received from the United States are applied to the support of a newspaper, and to other objects, more important to the rich than the poor, erroneous impressions upon these subjects may prevail. But to form just conceptions of the spirit and objects of these efforts, we must look at their practical operation upon the community. It is here, if the facts which have been stated to us are correct, and of which we have no doubt, that they will be found wanting.

"The relative condition of the two races of men, who yet divide this portion of the continent between them, is a moral problem involved in much obscurity. The physical causes we have described, exasperated by the moral evils introduced by them, are sufficient to account for the diminution and deterioration of the Indians. But why were not these causes counteracted by the operation of other circumstances? As civilization shed her light upon them, why were they blind to its beams? Hungry or naked, why did they disregard, or regarding, why did they neglect, those arts by which food and clothing could be procured? Existing for two centuries in contact with a civilized people, they have resisted, and successfully too, every effort to meliorate their situation, or to introduce among them the most common arts of life. Their moral and their intellectual condition have been equally stationary. And in the whole circle of their existence, it would be difficult to point to a single advantage which they have derived from their acquaintance with the Europeans. All this is without a parallel in the history of the world. That it is not to be attributed to the indifference or neglect of the whites, we have already shown. There must then be an inherent difficulty, arising from the institutions, character, and condition of the Indians themselves. It is easy, in contemplating the situation of such a people, to perceive the difficulties to be encountered in any effort to produce a radical change in their condition. The *fulcrum* is wanting upon

which the lever must be placed. They are contented as they are; not contented merely, but clinging with a death-grasp to their own institutions. This feeling, inculcated in youth, strengthened in manhood, and nourished in age, renders them inaccessible to argument or remonstrance. To roam the forests at will, to pursue their game, to attack their enemies, to spend the rest of their lives in listless indolence, to eat inordinately when they have food, to suffer patiently when they have none, and to be ready at all times to die,—these are the principal occupations of an Indian. But little knowledge of human nature is necessary, to be sensible how unwilling a savage would be to exchange such a life for the stationary and laborious duties of civilized society. Experience has shown, that the Indians are steadily and rapidly diminishing. And the causes of this diminution are yet in constant and active operation. It has also been shown, that our efforts to stand between the living and the dead," continues the writer before mentioned, "to stay this tide which is spreading around them and over them, have long been fruitless, and are now hopeless. And equally fruitless and hopeless are the attempts to impart to them, in their present situations, the blessings of religion, the benefits of science and the arts, and the advantages of an efficient and stable government. The time seems to have arrived, when a change in our principles and practice is necessary; when some new effort must be made to meliorate the condition of the Indians, if we would not be left without a living monument of their misfortunes, or a living evidence of our desire to repair them."

We hope, we may say we believe, from all we have read on both sides of this controversy, that the North American Review does, in fact, take too unfavourable a view of the improvement which has taken place among the Cherokees; and that christianity and civilization have produced extensively beneficial results, though, probably, not equal to the sincere but sanguine representations of some of the advocates of the Cherokee character.

The attention of the people of the United States, and, in some measure, of Europe, has been attracted to this interesting subject with peculiar force at the present time, in consequence of the controversy car-

of any other man living, or perhaps any other who ever existed in a rude state of nature.

It perhaps may not be known that the government of the United States had a fount of types cast for his alphabet; and that a newspaper, printed partly in the Cherokee language, and partly in the English, has been established at New Echota, and is characterized by decency and good sense; and thus many of the Cherokees are able to read both languages. After putting these remarks to pa-

per, I had the pleasure of seeing the head chief of the Cherokees, who confirmed the statement of See-quah-yah, and added, that he was an Indian of the strictest veracity and sobriety. The western wilderness is not only to blossom like the rose; but there, man has started up, and proved that he has not degenerated since the primitive days of Cecrops, and the romantic ages of wonderful effort and god-like renown.—*Knapp's Lectures on American Literature*

ried on between the state of Georgia and the Cherokee nation residing within its limits. We have already observed, that the civil and political relations existing between the aborigines and the white inhabitants, are such as the world affords no example of. In other cases, the less civilized inhabitants have either become the subjects of their conquerors, or have been amalgamated with them; but the North American Indians have never intermingled with the whites, and have been permitted by them to exist in a state of almost independence, in the very heart of some of their states. The Cherokees have retained possession of the northwestern portion of the state of Georgia, and not only decline to relinquish their title to it, but have formed a constitutional government, as already stated, among themselves, and claiming an entire exemption from the control of the laws and government of the state, have assumed all the essential attributes of sovereignty, and appealed to the general government to support them in that claim. The establishment of this government, thus claiming to be independent, and the probability that a similar policy will be adopted by the other southern tribes, by which means they may become permanently established in their present possessions, necessarily presents to the states within whose limits they reside, a serious question for consideration. It is evident, that if this pretension be not resisted now, resistance hereafter will be vain. It is one of those questions, eminently practical, which a few years' acquiescence would settle. What might now be the assertion of a just and proper jurisdiction by the civilized communities, might then be an unjust claim, to be enforced only by war and conquest. The following is the argument of the writers already referred to on this point:—"This demand is now made for the first time, since the discovery of the continent. Writers upon natural law, courts of high character and jurisdiction, the practice of other nations, are all adverse to it. We can discern no advantages which either party can reasonably anticipate from such a measure. There can be none to the Indians; for if they are anxious and prepared for a stable government, which shall protect and encourage all, such governments they will find in the states where they reside. What has a Cherokee to fear from the operation of the laws of Georgia? If he has advanced in knowledge and improvement, as many sanguine persons believe and represent, he will find these laws more just, better administered, and far more equal in their operation, than the *regulations* which the chiefs have established, and are enforcing. What Indian has ever been injured by the laws of any state? We ask the

question without any fear of the answer. If these Indians are too ignorant and barbarous to submit to the state laws, or duly to estimate their value, they are too ignorant and barbarous to establish and maintain a government which shall protect its own citizens, and preserve the necessary relations and intercourse with its neighbours. And if there are any serious practical objections to the operation of these laws, growing out of the state of society among the Indians, it would be easy for the state authorities to make such changes and interpose such securities as would protect them now, and lead them hereafter, if any thing can lead them, to a full participation in political rights. New York has acted upon this principle, in authorizing the Brothertown Indians to hold town meetings and elect town officers. No doubt can exist of the disposition of the state legislatures thus to accommodate their laws to the actual condition of the Indians. And in fact it is the criminal, and not the civil code, from which they have any thing to fear. The former extends to them all, and at all times, and in its process, its prohibitions, and its punishments, introduces regulations utterly at variance with all they have seen, or heard, or believed. The rights and remedies secured and provided by the civil code would affect them less, as they have little for them to operate upon, and the obligation of a promise is not wholly unknown to them. But the experiment has already been made, in many of the states, of extending over them the action of the criminal laws; and, as we have seen, the general government has done the same, through the whole vast extent of the Indian country, however rude or barbarous may be the tribes inhabiting it, in all cases where an injury has been committed against a white man. We have yet to learn, that any injustice has resulted from this legislation. But, if it is difficult to perceive the advantages which the Indian tribes would derive from these independent governments, it is not difficult to foresee the mischiefs they would produce to the states and people within whose limits they might be formed. The progress of improvement would be checked. Extensive tracts of land would be held by the Indians in a state of nature. The continuity of settlements, and the communication between them, would be interrupted. Fugitives from labour and justice would seek shelter, and sometimes find it, in these little sovereignties. Questions of conflicting jurisdiction would frequently occur, not easy to be determined; for in vain might we search for principle, analogy, or precedent, by which to adjust them. There is already enough of the *imperium in imperio* in our government.

Another wheel is not wanted to render the machinery still more complicated. In the whole extent of christendom can a single instance be produced, where a state has voluntarily permitted, within its acknowledged boundaries, the establishment of a government independent of, and unconnected with its own?"

While the Cherokees are endeavouring to carry their point with a high hand, making it *death* for any individual, or number of individuals, to agree to sell or exchange any portion of their land without consent of their new government, the legislature of Georgia has intimated its intention not only to extend its laws* over the Indian tribes, but ultimately to compel their removal by force. The president of the United States, however, assures them, that this will not be permitted; while he informs them also, that, if they remain in the state of Georgia, they must submit to its laws. "This is the course," says the *North American Review*, "we had a right to expect, and to which there can be no just objection. Let the whole subject be fully explained to the Indians. Let them know that the establishment of an independent government is a hopeless project, which can not be permitted, and which, if it could be permitted, would lead to their inevitable ruin. Let the offer of a new country be made to them, with ample means to reach it and to subsist in it, with ample security for its peaceful and perpetual possession, and with a pledge, in the words of the secretary of war, 'that the most enlarged and generous efforts, by the government, will be made to improve their minds, better their condition, and aid them in their efforts of self-government.' Let them distinctly understand, that those who are not disposed to remove, but wish to remain and submit to our laws, will, as the president has told the Creeks, 'have land laid off for them and their families, in fee.' When all this is done, no consequences can affect the character of the government, or occasion regret to the nation. The Indians would go, and go speedily, and with satisfaction. A few perhaps might linger around the site of their

council-fires; but almost as soon as the patents could be issued to redeem the pledge made to them, they would dispose of their possessions and rejoin their countrymen. And even should these prefer ancient associations to future prospects, and finally melt away before our people and institutions, the result must be attributed to causes which we can neither stay nor control. If a paternal authority is exercised over the aboriginal colonies, and just principles of communication with them, and of intercommunication among them, are established and enforced, we may hope to see that improvement in their condition, for which we have so long and so vainly looked.

"Impressed with the conviction, that a removal from their present position, and from the vicinity of the settlements to the regions beyond the Mississippi, can alone preserve from final extinction the remnant of the aboriginal population, a number of benevolent men have associated themselves, and established a society, under the appellation of 'The Indian Board, for the Emigration, Preservation, and Improvement of the Aborigines of America,' the objects of which are distinctly indicated by this title. The society avows its intention to afford to the emigrant Indians, all the necessary instruction in the arts of life and the duties of religion, and pledges itself to 'co-operate with the federal government of the United States in its operations on Indian affairs, and at no time to contravene its laws.' The plan for their removal, establishment, and gradual improvement, sketched by Colonel M'Kenny, is just to ourselves, and liberal to them; offering a fair exchange of property, ensuring present subsistence and future support, and holding out rational prospects of melioration in their external circumstances and their moral relations. 'It is proposed in the first place to give them a country, and to secure it to them by the most ample and solemn sanctions, suitable in all respects, in exchange for theirs; to pay them for all their improvements, and see them, free of cost to their new homes; to aid them after their arrival, and protect them; to put

* In January, 1828, proceedings were had by the legislature with regard to the course pursued by the United States, on the Indian question, and a report on the subject of the Cherokee lands was made to the legislature, and the committee recommended the adoption of the following resolutions, among others:—

"Resolved, That the United States, in failing to procure the lands in controversy, as 'early' as the same could be done upon 'peaceable' and 'reasonable terms,' have palpably violated their contract with Georgia, and are now bound, at all hazards, and without regard to terms, to procure the said lands for the use of Georgia.

"Resolved, That the policy which has been pursued by the United States towards the Cherokee Indians, has not been in good faith towards Georgia; and that as all the difficulties which now exist to an extinguishment of the Indian title, have resulted alone

from the acts and policy of the United States, it would be unjust and dishonourable in them to take shelter behind those difficulties.

"Resolved, That all the lands appropriated and unappropriated, which lie within the conventional limits of Georgia, belong to her absolutely; that the title is in her; that the Indians are tenants at her will, and that she may, at any time she pleases, determine that tenancy by taking possession of the premises; and that Georgia has the right to extend her authority, and to coerce obedience to them, from all descriptions of people, be they white, red, or black, who may reside within her limits.

"Resolved, That Georgia entertains for the general government so high a regard, and is so solicitous to do no act that can disturb the public tranquillity, that she will not attempt to enforce her rights by violence, until all other means of redress fail."

over them at once the framework of a government, and to fill this up, as their advancement in civilization may require it; to establish schools over their country for the enlightening of the rising generation, and to give them the gospel. In fine, it is proposed to place them in a territorial relation to us in all respects, and in the enjoyment of all the privileges consequent upon such a relation, civil, political, and religious. Thus will they attain an elevation to which, in their present relations, they can never aspire. And then would new influences be created, ennobling in their tendencies, and animating in their effects. Under these the Indian would rise to the distinction to which he has always been a stranger, and live and act with reference to the corresponding honours and benefits of such a state."

It appears that there is still an extensive and decided difference of opinion on this subject among the patriotic and benevolent in the United States. On this point, Colonel M'Kenney very candidly observes, "That men, and good men, should differ in their views of what ought to be done for the preservation and improvement of our Indians, is natural. We know there are men, and good men, who are opposed to the emigration of the Indians. We respect them and their motives. They seek to save and civilize these people. We profess to aim at the accomplishment of the same end, and differ only as to the mode. We once entertained similar views of this question with them, and thought it practicable to preserve and elevate the character of our Indians, even in their present anomalous relations to the states, but it was 'distance that lent enchantment to the view.' We have since seen for ourselves, and that which before looked like flying clouds, we found, on a nearer approach, to be impassable mountains. We believe, if the Indians do not emigrate, and fly the causes which are fixed in themselves, and which have proved so destructive in the past, *they must perish*. We might distrust our conclusions, though derived from personal investigation, did not experience confirm them. But, alas! it is the admonition of experience, more than any thing else, that claims and urges us to employ all honourable means to persuade these hapless people to acquiesce in the policy which is proposed to them."

"We cannot enter," says the reviewer, "into a full

* Although the following passages from the interesting pamphlet of Mr. Onley give a very afflicting view of the present state of the Indian tribes in the United States, we apprehend them to be calculated to correct notions which have been taken up on too slight grounds, while they are of a character too descriptive to be omitted:—

"You have your missionaries at Gayhead, Stockbridge, Brothertown, Oneida, among the Tuscaroras, Tonnewantas, Senecas, Wyandots, Ottawas, Potawatamies, Miamies, &c.; but the most

examination of the effect of planting colonies of Indians in the western regions. From the retrospective view furnished by their history, it is evidently the only means in our power, or in theirs, which offers any probability of preserving them from utter extinction. As a *dernier resort* therefore, apart from the intrinsic merits of the scheme itself, it has every claim to a fair experiment. But when viewed in connexion with the peculiar notions and mode of life of the Indians, the prospect it offers is consolatory to every reflecting person. Upon this subject we shall adduce the opinion of an able and dispassionate labourer in the great field of aboriginal improvement. The Rev. Mr. M'Coy has for many years devoted himself, with an industry equalled only by his zeal and disinterestedness, to the life and labour of a missionary. Ten years since, he commenced a school for the instruction of youth, at Fort Wayne, in Indiana, but the progress of the settlements soon compelled him to retire, and he removed his establishment to the St. Joseph of Lake Michigan. He here founded an institution for the benefit of the Indians, and adopted a course of procedure well calculated to be permanently beneficial to them. The youths were taught reading, writing, and arithmetic, and also agriculture, the mechanical arts, and domestic duties. Their mental discipline, moral advancement, and progress in the business and occupations of life, went on together. The principal and his coadjutors were indefatigable in their application, and sanguine in their expectations, and for a time every thing promised success. And we ourselves, from a personal examination of the establishment, augured favourably of its permanence and usefulness. We have never seen a similar institution managed with more purity or judgment. But the novelty soon wore off, the Indians became dissatisfied, the institution has declined, and Mr. M'Coy is convinced, that nothing but removal, and speedy and entire removal, can save from utter ruin those who have been taught, or those who are untaught. During the year 1828, he repaired to the country west of the Mississippi, to examine its adaptation to the purposes of the Indians, and has returned, satisfied with the prospect it offers, and he is now directing his efforts to procure their emigration.* Mr. M'Coy, from personal observation, describes the country west of Mis-

they can do in the present posture of affairs is to soften, as it were, the pillow of the dying. They have been instrumental in benefiting a few; nevertheless, in a national point of view, all these tribes, as well as others near at hand, west of Lake Michigan and west of the Mississippi river, continue to dwindle,—they are positively perishing, and perishing rapidly.

souri and Arkansas, as suitable for the colonization and permanent residence of the Indians. 'This country,' he says, 'is generally high, healthy, rich, its extent adequate to the purposes under consideration, and the climate desirable.' He approves the general plan originally submitted by Mr. Monroe and Mr. Calhoun, and recommended anew by the present executive and the secretary of war, of removing, with their own consent, the various tribes to that region, and establishing over them such a government as will protect, and restrain, and improve them. If the conviction of its importance should lead to its adoption, and to the voluntary acquiescence of the Indians, it would be easy to regulate hereafter the practical details of the subject, and to accommodate them to the progress and prospects of the migrating colonists and of the permanent settlements formed by them."

Had the English historian of the United States confined himself to the manners, customs, history and character of the Indians, instead of discussing their treatment, and the policy of it, the whole article would have been more acceptable to his readers on this side of the water. These things are concerns of our own, and should not be interfered with by foreigners. In future ages, the antiquarian may be allowed to call them up, but not while the subjects are agitated among ourselves. We shall call the attention of the reader to a few characteristics of the sons of the forest, and advert to a few passages of their history.

"Prior to their intercourse with Europeans, the weapons of the Indians were bows and arrows, clubs, tomahawks, and spears of wood, curiously wrought with stones, shells, or other sharply-pointed implements. The tomahawks, spears, and arrows, were generally edged with stones, bones, or other materials that could be shaped to an acute point. For the defence of their persons, they had targets, fabricated of the bark of trees and other flexible substances. The bark of the small shrub called *moose wood*, which was plentifully found in the woods, furnished excellent cordage, and a sort of wild hemp was used for the same purpose. After they began to traffic with the Europeans, their rude weapons were laid aside for those of iron or other metals; and before the commencement of the war with Philip, though the trade was strictly restrained by the government of the provinces, the Indians had obtained many fire-arms, and used them with dexterity.

"In the construction of their canoes, which were of the highest importance in many of their expeditions, as well as their ordinary business, they were singularly curious: these were fabricated from the bark of certain trees, generally of the white birch, or hollowed out of the trunks of soft timber, by burning and scraping with their rude

implements. The former, though they required skill in the workman, were not so difficult in their construction as the log canoe; they were ingeniously shaped and curiously sewed together with roots, and besmeared with gums of various trees to render them tight, and strengthened within with ribs, or transverse pieces. A bark of this kind, sufficient for the transportation of five or six Indians, was portable on the back of a single man; and in this manner they were carried with facility over the portages between rivers and lakes.

"The construction of the log canoe required much labour, as well as patience and perseverance. A large tree was to be felled and hollowed out by fire, or by their imperfect tools, or with both united. Roger Williams, who had many opportunities of observing their modes of construction, says, 'I have seen a native go into the woods with his hatchet, carrying only a basket of corn, and stones to strike fire; when he had felled his tree, and made a little house or shed of bark, he puts fire and follows the burning in many places; his corn he boils, and hath his brook by him, and sometimes angles for a little fish; but so he continues his burning and hewing, until he hath, within ten or twelve days, finished his boat.'

"The food of the natives was principally obtained from the game and fish with which the country abounded. But they cultivated in the intervals considerable quantities of corn, beans, pumpkins, and squashes; the forest furnished a great variety of nuts and other fruits, which, in the sale of their lands to the English, they generally reserved for their own use. Indian corn was an important article; this, after being parched and pounded to a coarse meal, and moistened with water, was called *noke-hick*, and eaten on all occasions, when animal food could not be procured, or expedition forbid the time necessary for more protracted cookery. On all excursions, parched corn was carried in small baskets, or sacks, and was a sure preservative against famine.

"Various were their devices for taking their large game. One was the constructing of slight fences of brush, in two lines, wide at one extremity, and converging at a point at the other, where was a narrow opening. Here the huntsman placed himself, under some cover, and shot the game as it passed through. Sometimes a curious kind of trap was contrived at the opening, by bending down a flexible staddle, to which was attached a snare for seizing the animal. When caught in this trap, his struggles disengaged the staddle, and suspended him in the air. A mare belonging to one of the early settlers, straying in the woods, was caught in one of these traps and raised into the air; the Indians discovered her, and observing the shoes upon her feet, at once concluded that she belonged

to the English, and running with great rapidity, told them their *squaw horse* was hanging to a tree.

"Fish were an important article of food, and were taken with nets, hooks, and long spears. With the latter they supplied themselves with shad and salmon in abundance, as they ascended the cataracts of the rivers, in the spring season. The contrivance was the following: The extremity of the horn of a deer, or other animal, having a cavity at one end, and sharply pointed at the other, was loosely placed upon the end of the spear; a cord attached to the horn was stretched along the shaft, and held in the hand that directed the stroke. On plunging the point into the fish, the spear was drawn a little back, and the horn, slipping off, turned across the perforation, and the fish was drawn from the water.

"The skill with which the Indians directed their course in the pathless forests, as well as their perseverance and rapidity, were astonishing. 'I have,' says Roger Williams, 'known many of them run between four-score and a hundred miles, in a summer's day, and back within two.' In travelling, 'I have been guided by them twenty, thirty, and forty miles, through the woods, on a straight course, out of any path. When the English first came to this country,' adds he, 'it was admirable to see what paths their naked feet had made in the wilderness, in the most stony and rocky places.'

"For their apparel, the Indians were indebted to the moose, deer, bear, beaver, otter, fox, raccoon, and some other animals. The skin of the deer was an important material: these, when dressed, furnished a pliable cover, and were much worn. But their clothing was but imperfectly fitted to their bodies, and some parts were left uncovered. After the arrival of the English, the natives very readily exchanged their fur dresses for woollen blankets, and other clothes of European manufacture, and in this change the English found a profitable trade.

"For travelling in cold seasons, they wore a rude kind of shoe, called a *mockason*, which was fabricated from moose and deer skins, gathered to shape the feet, by sinews of animals; but they were a poor defence for the feet in wet weather. In travelling in deep snows, they had recourse to *snow-shoes* or *rackets*. A light, flexible piece of walnut, or other wood, was bent into an elliptical form, terminating in a point behind; two light pieces of wood extended across the shoe, for the purpose of strengthening the bow, affording also a rest for the foot, and the whole space included within the bow, was interlaced with thongs of deer or moose hide, in a reticulated manner. The foot, resting upon the cross-bars, was lashed so as to confine it to the shoe. Owing to its elasticity, the strides of the traveller were much greater than those usually made on a firm surface without them. Habituated

from their youth to this mode of travelling, the Indians were dexterous in the use of the snow-shoe, and, in the depth of winter, performed marches truly astonishing.

"In their winter expeditions, their *bivouac*, or night camp, was in a swamp, or other thick wood, where they were shielded from the winds and storms. Usually the snow was cleared away, and their fires kindled upon the earth, around which, boughs of evergreens, such as hemlock and fir, were spread upon the sloping sides of the excavation. Upon these boughs, wrapped in their skins, or blankets, they passed the coldest nights, without suffering any inconvenience. In many cases, they dispensed with their fires, and lay upon the snow with no covering except their furred robes, and not unfrequently, in the morning, found themselves covered with a new supply, fallen in the night; and in this manner it is said they reposed very comfortably."

The eloquence of the Indians is a subject more often talked of than understood. The Indian orators of the wilds of this country have had a wonderful influence on peace and war, and in every thing relating to the welfare of their tribes. I have taken great pains to examine those who have appeared in our cities as the orators of the deputations of different Indian nations, and the superiority of these over others of their tribes was distinctly visible. Seldom was there one among the Indian orators under forty or fifty years of age, and many much older. In general, they were well-made men, of a powerful voice, and of ready delivery. The accounts given by themselves, and by others, of their education, were very similar in the different tribes. Each young warrior, when he had returned from a battle or an embassy, had a right, and in fact was expected, to give a minute account of every thing he had seen or done. From these specimens of speaking, the sagacious sons of the forest judge with great shrewdness of the respective merits of the aspirants for distinction. The best speakers are encouraged, and selected for other enterprises. To improve their minds, they listen hours together to the historical legends of the aged warrior and patriot, and treasure up the events he relates, and the sentiments he utters. The student in oratory is careful to remember the best figures of rhetoric which are used by the aged in illustrating their sentiments; hence a set of phrases have descended among them for ages, such as *to bury the hatchet*, *to smoke the calumet of peace*. These and many other phrases have become fixtures in their language, and have no doubtful meaning. In times of peace, these orators, or rather those preparing to take that high office, travel and visit other tribes. The most intelligent of them were selected for this purpose. The Lenni-Lenapes were, in former times, considered the Athenians of North American In

dians, and many youths of other tribes were found among them, learning their language, and making themselves masters of their traditions. The Foxes are now visited as the Lenni-Lenapes were in past ages, as possessing a language of a more general character than that of other nations.

American history furnishes us with many instances of eloquence among Indian orators. There is a lofty tone in the eloquence of the red man, that surpasses the self-possession and confidence of an orator in the civilized world. Like Logan, they would not turn on their heels to save themselves from martyrdom. Instances of noble bearing are found in every history of their wars. Philip, the king of the Wampanoags, was not only a great warrior, but a great orator. He was the Demosthenes of the woods, who struggled with all his might for his country, and was equally unsuccessful. Philip was surrounded by great men. Nanunthenoo, the head sachem of the Narragansetts, was taken by Captain Dismore in the war of 1676. He was son to the patriotic Miantonomoh, and inherited the pride and eloquence of his father. He would not accept his life, when it was offered on the condition that he should make peace with the English. When he was informed that they were determined to put him to death, he said, "I like it well. I shall die before my heart is soft, or shall have spoken any thing unworthy of myself."

The speeches of the Indians of our day are equal to any which have been recorded by our fathers. Specimens of rare eloquence have been witnessed in our times. The Winnebagoes and Minomines have been distinguished by their speeches to the president of the United States. The interview between the Winnebagoes and Mr. Adams (then president) was impressive. The Indians had entertained the president and his cabinet, the day previous to their introduction, with a war dance, which was expressive of the changes and passions of war. The Indians, fifteen or sixteen in number, were led into the hall of audience at the president's house, and introduced to him, and gravely took their seats. After a silence of some time, the aged chief, almost entirely bald, said to have seen ninety winters, rose, and took his stand in front of the president, and made a few remarks respecting his age, and his happiness in seeing his great father, and concluded by observing that the orator of the tribe would address him more largely, and then retired. The orator approached to within thirty feet of the president, threw off his blanket from his shoulders, and took it on his left arm, exhibiting a manly chest and sinewy arms. After looking around for a moment, he began:—"Great father, I was not born a chief, but was made one by my tribe for my abilities. I never was drunk, or ever told a false-

hood. Give me your ear; I will not deceive you. We have come a long journey to say to you that bad men have told lies about the Winnebagoes, and to show you our hearts; look into them; we know you are wise," &c. The whole interview was conducted with great ceremony, each Indian keeping his place with the exactness of the same number of courtiers at a presentation to the king. After the interview, presents of pistols, swords, and rifles, were made to the delegation by the president; and all of them went to their lodgings, and became intoxicated in a carousal, the orator alone excepted; he remained perfectly sober, and assisted the keeper to prevent the Indians from doing themselves any harm. Their ferocity of character is fully developed in their moments of intoxication. I once heard *Red Jacket*, after rising from a fit of inebriation, curse, with most sincere and passionate contrition, the use of ardent spirits. He portrayed the whole race of red men as sinking under it faster than the arms of their enemies could destroy them.

"Few Indians' names have been oftener repeated than that of LOGAN, and yet of scarcely any individual of his race is the history which has reached us less complete. He was a chief of the Six Nations—a Cayuga—but resided during most of his life in a western settlement, either at Sandusky or upon a branch of the Scioto—there being at the former location, a few years before the revolution, about three hundred warriors, and about sixty at the latter.

"Logan was the second son of Shikellimus; and this is the same person whom Heckewelder describes as 'a respectable chief of the Six Nations, who resided at Shamokin (Pennsylvania), as an agent, to transact business between them and the government of the state.' In 1747, at a time when the Moravian missionaries were the object of much groundless hatred and accusation, Shikellimus invited some of them to settle at Shamokin, and they did so. When Count Zinzendorf and Conrad Weiser visited that place, several years before, they were very hospitably entertained by the chief, who came out to meet them (says Loskiel) with a large, fine melon, for which the count politely gave him his fur cap in exchange; and thus commenced an intimate acquaintance. He was a shrewd and sober man,—not addicted to drinking, like most of his countrymen, because 'he never wished to become a fool.' Indeed, he built his house on pillars, for security against the drunken Indians, and used to ensconce himself within it on all occasions of riot and outrage. He died in 1749, attended in his last moments by the good Moravian bishop Zeisberger, in whose presence, says Loskiel, 'he fell happily asleep in the Lord.'

"Logan inherited the talents of his father, but not his prosperity. Nor was this altogether his own fault. He

took no part, except that of peace-making, in the French and English war of 1760, and was ever before and afterwards looked upon as emphatically the friend of the white man. But never was kindness rewarded like his.

"In the spring of 1774, a robbery and murder occurred in some of the white settlements on the Ohio, which were charged to the Indians, though perhaps not justly, for it is well known that a large number of civilized adventurers were traversing the frontiers at this time, who sometimes disguised themselves as Indians, and who thought little more of killing one of that people than of shooting a buffalo. A party of these men, land-jobbers and others, undertook to punish the outrage in this case, according to their custom, as Mr. Jefferson expresses it, in a summary way.

"Colonel Cresap, a man infamous for the many murders he had committed on those much injured people, collected a party, and proceeded down the Kenhawa in quest of vengeance. Unfortunately, a canoe of women and children, with one man only, was seen coming from the opposite shore, unarmed, and not at all suspecting an attack from the whites. Cresap and his party concealed themselves on the bank of the river, and the moment the canoe reached the shore, singled out their objects, and, at one fire, killed every person in it. This happened to be the family of Logan.

"It was not long after this that another massacre took place, under still more aggravated circumstances, not far from the present site of Wheeling, Virginia,—a considerable party of the Indians being decoyed by the whites, and all murdered, with the exception of a little girl. Among these, too, was both a brother of Logan, and a sister, and the delicate situation of the latter increased a thousand fold both the barbarity of the crime and the rage of the survivors of the family.

"The vengeance of the chieftain was indeed provoked beyond endurance; and he accordingly distinguished himself by his daring and bloody exploits in the war which now ensued, between the Virginians on the one side, and a combination mainly of Shawanees, Mingoës, and Delawares, on the other. The former of these tribes were particularly exasperated by the unprovoked murder of one of their favourite chiefs, Silver-heels, who had in the kindest manner undertaken to escort several White traders across the woods from the Ohio to Albany, a distance of nearly two hundred miles.

"The civilized party prevailed, as usual. A decisive battle was fought upon the 10th of October, of the year last named, on Point Pleasant, at the mouth of the Great Kenhawa in West-Virginia, between the confederates, commanded by Logan, and one thousand Virginian riflemen, constituting the left wing of an army led by Gov-

ernor Dunmore against the Indians of the North-West. This engagement has, by some annalists,—who, however, have rarely given the particulars of it,—been called the most obstinate ever contested with the natives; and we therefore annex an official account of it, which has fortunately been brought to light within a few years.

"Monday morning, [the 10th,] about half an hour before sunrise, two of Capt. Russell's company discovered a large party of Indians about a mile from camp; one of which was shot down by the Indians. The other made his escape, and brought in the intelligence; two or three minutes after, two of Capt. Shelby's men came in and confirmed the account.

"Col. Andrew Lewis, being informed thereof, immediately ordered out Col. Charles Lewis to take the command of one hundred and fifty men, of the Augusta troops; and with him went Capt. Dickinson, Capt. Harrison, Capt. Wilson, Capt. John Lewis of Augusta, and Capt. Lockridge, which made the first division. Col. Fleming was ordered to take command of one hundred and fifty more, consisting of Botetrou, Bedford and Fincastle troops—viz. Capt. Bufort of Bedford, Capt. Love of Botetrou, and Capt. Shelby and Capt. Russell of Fincastle,—which made the second division. Col. Charles Lewis's division marched to the right, some distance from the Ohio; Col. Fleming, with his division, up the bank of the Ohio, to the left. Col. Lewis's division had not marched quite half a mile from camp, when, about sunrise, an attack was made on the front of his division, in a most vigorous manner, by the united tribes of Indians, Shawanees, Delawares, Mingoës, Iaways, and of several other nations, in number not less than eight hundred, and by many thought to be a thousand. In this heavy attack Col. Lewis received a wound which in a few hours occasioned his death, and several of his men fell on the spot; in fact, the Augusta division was forced to give way to the heavy fire of the enemy. In about a minute after the attack on Col. Lewis's division, the enemy engaged the front of Col. Fleming's division, on the Ohio; and in a short time the colonel received two balls through his left arm, and one through his breast, and after animating the officers and soldiers, in a spirited manner, to the pursuit of victory, retired to camp.

"The loss of the brave colonels from the field was sensibly felt by the officers in particular; but, the Augusta troops being shortly after reinforced from camp by Col. Field, with his company, together with Capt. M'Dowel, Capt. Mathews and Capt. Stuart, from Augusta, and Capt. Arbuckle and Capt. M'Clenahan, from Botetrou, the enemy, no longer able to maintain their ground, was forced to give way till they were in a line with the troops of Col. Fleming, left in action on the bank of Ohio. In

this precipitate retreat Col. Field was killed. Capt. Shelby was then ordered to take the command. During this time, it being now twelve o'clock, the action continued extremely hot. The close underwood, and many steep banks and logs, greatly favoured their retreat, and the bravest of their men made the best use of them, whilst others were throwing their dead into the Ohio and carrying off their wounded.

"After twelve o'clock, the action, in a small degree, abated; but continued, except at short intervals, sharp enough till after one o'clock. Their long retreat gave them a most advantageous spot of ground, from whence it appeared to the officers so difficult to dislodge them, that it was thought most advisable to stand as the line was then formed, which was about a mile and a quarter in length, and had till then sustained a constant and equal weight of the action, from wing to wing. It was till about half an hour of sunset they continued firing on us scattering shots, which we returned to their disadvantage; at length, night coming on, they found a safe retreat. They had not the satisfaction of carrying off any of our men's scalps, save one or two stragglers, whom they killed before the engagement. Many of their dead they scalped, rather than we should have them; but our troops scalped upwards of twenty of those who were first killed. It is beyond a doubt their loss in number far exceeds ours, which is considerable."

"The Virginians lost in this action two of their colonels, four captains, many subordinate officers, and about fifty privates killed, besides a much larger number wounded. The governor himself was not engaged in the battle, being at the head of the right wing of the same army, a force of fifteen hundred men, who were at this time on their expedition against the towns of some of the hostile tribes in the North-West.

"It was at the treaty ensuing upon this battle that the following speech was delivered,—sufficient to render the name of Logan famous for many a century. It came by the hand of a messenger, sent (as Mr. Jefferson states) that the sincerity of the negotiation might not be distrusted on account of the absence of so distinguished a warrior as himself:

"I appeal to any white man to say, if he ever entered Logan's cabin hungry, and he gave him not meat; if he ever came cold and naked, and he clothed him not. During the course of the last long and bloody war, Logan remained idle in his cabin, an advocate for peace. Such was my love for the whites, that my countrymen pointed as they passed and said, 'Logan is the friend of white men.' I had even thought to have lived with you, but for the injuries of one man. Colonel Cresap, the last spring, in cold blood, and unprovoked, murdered all the

relations of Logan, not sparing even my women and children. There runs not a drop of my blood in the veins of any living creature. This called on me for revenge. I have sought it: I have killed many: I have fully glutted my vengeance. For my country, I rejoice at the beams of peace. But do not harbour a thought that mine is the joy of fear. Logan never felt fear. He will not turn on his heel to save his life. Who is there to mourn for Logan?—Not one!"

THE ELOQUENCE OF THE PROPHET.

"Father!—It is three years since I first began with that system of religion which I now practise. The white people and some of the Indians were against me; but I had no other intention but to introduce among the Indians those good principles of religion which the white people profess. I was spoken badly of by the white people, who reproached me with misleading the Indians; but I defy them to say that I did any thing amiss.

"Father!—I was told that you intended to hang me. When I heard this, I intended to remember it, and tell my father, when I went to see him, and relate to him the truth.

"I heard, when I settled on the Wabash, that my father, the governor, had declared that all the land between Vincennes and Fort Wayne was the property of the Seventeen Fires.

"I also heard that you wanted to know, my father, whether I was God or man; and that you said, if I was the former, I should not steal horses. I heard this from Mr. Wells, but I believe it originated with himself.

"The Great Spirit told me to tell the Indians, that he had made them and made the world—that he had placed them on it to do good, and not evil.

"I told all the red-skins that the way they were in was not good, and that they ought to abandon it. I said that we ought to consider ourselves as one man, but to live agreeable to our several customs, the red people after their mode, and the white people after theirs. Particularly that they should not drink whisky; that it was not made for them, but the white people, who alone knew how to use it; that it is the cause of all the mischiefs which the Indians suffer; and that they must always follow the directions of the Great Spirit, and we must listen to him, as it was he that has made us.

"Brothers!—Listen to nothing that is bad. Do not take up the tomahawk, should it be offered by the British, or by the Long-Knives. Do not meddle with any thing that does not belong to you, but mind your own business, and cultivate the ground, that your women and your children may have enough to live on. I now inform you

that it is our intention to live in peace with our father and his people forever.

"My father!—I have informed you what we mean to do, and I call the Great Spirit to witness the truth of my declaration. The religion which I have established for the last three years, has been attended to by the different tribes of Indians in this part of the world. Those Indians were once different people: they are now but one: they are all determined to practise what I have communicated to them, that has come immediately from the Great Spirit through me.

"Brother!—I speak to you as a warrior. You are one. But let us lay aside this character, and attend to the care of our children, that they may live in comfort and peace. We desire that you will join us for the preservation of both red and white people. Formerly, when we lived in ignorance, we were foolish; but now, since we listen to the voice of the Great Spirit, we are happy.

"I have listened to what you have said to us. You have promised to assist us. I now request you, in behalf of all the red people, to use your exertions to prevent the sale of liquor to us. We are all well pleased to hear you say that you will endeavour to promote our happiness. We give you every assurance that we will follow the dictates of the Great Spirit.

"We are all well pleased with the attention that you have showed us; also with the good intentions of our father, the president. If you give us a few articles, such as needles, flints, hoes, powder, and other things, we shall be able to take the animals that afford us meat with powder and ball."

SOME PASSAGES IN THE HISTORY OF THE INDIANS.

Philip's War.

"Depredations were made on the eastern towns in Massachusetts, and the war was carried to the interior towns. Philip had roused all the tribes within many hundred miles of his kingdom. Early in the spring of 1676, the Indians were scouring the settlements on Connecticut River. Those tribes that did not come into the views of Philip, were considered by him as enemies, the Mohawks among others. Philip and his men were at first successful, but he soon began to meet with reverses; his troops were repulsed at Hadley. Talcot, Turner, and other brave officers, with small forces, cut up the Indians in all directions, and gave Philip no rest. Still the great chieftain was unsubdued.

"Thus hunted and attacked in every direction, and straitened for provisions, the Indians became disheartened; large parties continued to return to Narraganset and the adjacent country, and many came in and surrendered to

the English. But the war continued to rage in the Plymouth quarter, where the veteran Capt. Church now performed the most gallant services. He penetrated the Indian country, destroyed their lodges, captured their women and children, killed their warriors, and spread desolation and terror far and wide.

"Philip, though unable to find a place of safety, still kept up his haughty spirit, and, disdaining submission, continued his hostilities with persevering energy. His allies, who held out at the northward, were less active, and began to flee in various directions; and the people on Connecticut River now found some respite from blood and carnage.

"Major Talcot, after his return from his expedition up the Connecticut, having recruited his force, was ordered to take a station at Westfield, in Massachusetts, and seize any opportunity that might offer, for attacking the fugitives. Not long after his arrival at that place, the trail of about two hundred Indians was discovered in the vicinity shaping towards the Hudson. Talcot immediately took the trail, and pressed on to overtake the Indians, and, on the third day, discovered them encamped on the west bank of Housatonic River, in the most perfect security. Being late in the day, he resolved to postpone an attack until next morning, and, drawing back, lay upon his arms in the most profound silence. Towards the dawn of day, he formed his troops into two divisions, one to pass the river below the Indians, make a detour, and attack them in their rear, while the other was to approach by a direct route opposite to their camp, and open a fire across the river the moment the attack commenced on the opposite side. The plan was partially frustrated. One of the Indians left the camp in the night, and proceeded down the river for the purpose of taking fish, and as the troops who had crossed the river, as had been ordered, were advancing to the attack, he discovered them, and gave the usual cry, *Awanux! Awanux!* on which he was instantly shot. Talcot, now opposite to the Indian camp, hearing the report, instantly poured in a volley, as the Indians were rising from their slumbers. A complete panic ensued, and they fled in confusion into the woods, followed by Talcot; and most who escaped the first fire made good their retreat. The division below was too far distant to share in the victory. Twenty-five Indians were left on the ground, and twenty were made prisoners; and among the former was the sachem of Quaboag. Talcot lost but one, and he a Mohegan.

"Soon after this affair, most of the remaining Nipmuck, Nashaway, Hadley, Springfield, and Pocumtuck Indians fled from their stations, either to the Mohekanucks, on the Hudson, the Pennacooks on the Merrimack, or to Canada; and a few joined the Schaghticoes, at the

mouth of Hoosack River, in the province of New York.

"Meanwhile the war continued in the south-east quarter of New England, under the desperate Philip; but the gallant Church and other officers gave him little rest. He was hunted and driven from his covert places, his chief men, wife, and children, killed or captured; but he still continued firm, and, secreting himself with a small force in the recesses of deep swamps, refused to submit. At length an Indian, whose brother had been shot by Philip for urging him to make peace, brought intelligence to Capt. Church, who was in Rhode Island, that the chief was in a swamp in Mount Hope Neck, and Church immediately resolved to try his skill upon him. With a small company of English, and a number of friendly Indians, accompanied by several volunteer officers, he passed over to the main, and, conducted by the Indian who brought the intelligence, soon reached the swamp, in which Philip was posted, with a considerable force; but darkness had now commenced. Perfectly acquainted with the ground, Church formed his men in extended order, placing an Englishman and an Indian together, with orders to fire upon any who should attempt to escape from the swamp. Captain Golding, with a party, was to penetrate the swamp, and rouse Philip at the dawn of day. Having made this disposition of his troops, Church was giving further orders, when a shot whistled over his head, followed immediately after by a whole volley from Golding's party, on an advanced guard of the enemy, posted in the margin of the swamp. Day had now dawned, and Philip, on the report of the guns, seized his *petunk*, powder-horn, and gun, left the swamp, and ran towards two of Church's enclosing chain of men; an Englishman levelled his piece against him, but it missed fire; his accompanying Indian, more fortunate, with a quick sight, sent two balls through the body of the chief, one piercing his heart, which laid him dead upon the spot. The important intelligence was immediately communicated to Church, but he kept it to himself, intending to make it known after the remaining enemy were driven from their cover. A terrific voice immediately thundered from the swamp, *Iootash! Iootash!* It was from Annawon, Philip's chief captain, calling to his men to maintain their ground. The English then rushed into the swamp, and, charging closely, threw the Indians into confusion. Annawon, with about sixty of his followers, made his escape, but one hundred and thirty were killed and captured. After the affair was over, Church communicated to his troops the death of Philip, and repaired to the spot where he lay. He had fallen upon his face, in a muddy spot of ground, from which he was drawn; the head taken off, and the body left to be devoured by wild beasts. Thus

fell this great chief, in a struggle, which, had it been in favour of a civilized people, by a civilized commander, and attended with success, would have immortalized his name.

"Remarking upon the fate of this chief, a historian says—'The death of Philip, in retrospect, makes different impressions from what were made at the time of the event. It was then considered as the extinction of a virulent and implacable enemy; it is now viewed as the fall of a great warrior, a penetrating statesman, and a mighty prince. It then excited universal joy and congratulation, as a prelude to the close of a merciless war; it now awakens sober reflections on the instability of empire, the peculiar destiny of the aboriginal race, and the inscrutable decrees of Heaven. The patriotism of the man was then overlooked in the cruelty of the savage; a little allowance was made for the natural jealousy of the sovereign on account of the barbarities of the warrior. Philip, in the progress of the English settlements, foresaw the loss of his territory, and the extinction of his tribe, and made a mighty effort to prevent those calamities. Our pity for his misfortunes would be still heightened, if we could rely on the tradition—that Philip and his old men were averse to the war; that Philip wept with grief, at the news of the first English who were killed; and that he was pressed into his measures by the irresistible importunity of his young warriors.'

"Annawon, Philip's chief captain and counsellor, was now at the head of the hostile Indians. He was an artful and long-experienced warrior, and had often declared that the English should not take him while alive. After the defeat at the swamp where his commander was killed, he, with fifty or sixty of his best men, took post in Squannakonk Swamp, in the south-east part of Rehoboth. Several Indians from his camp were soon after captured, among whom was an Indian with his daughter. By these Church was informed of the situation of Annawon's camp, and by a stratagem, which none but the most daring would have adopted, succeeded in capturing the whole without resistance. At the head of a small party, conducted by the captured Indian and his daughter, who, it appears, readily engaged in the attempt, Church, by a cautious approach in the evening, reached the edge of a rocky precipice, under which Annawon was encamped, and made a critical examination of the position. A tree had been felled close under the precipice, and boughs placed against it, to form a sort of hut; fires were burning near, pots and kettles boiling, and spits turning, loaded with meat; the fire-arms stood near the foot of the rock, resting upon a pole, supported with crotches, and covered with a mat, to keep them dry; the Indians were separated into three parties at small distances, surrounded by a

rude abatis; and Annawon with his son lay reposing very near the arms.

"Having viewed the camp sufficiently, Church and his party withdrew, and formed his plan for the surprise. Informed by his guide, that no one was allowed to go out, or enter the camp, except by the precipice, he determined to make his effort in that direction. The guide and his daughter, with baskets upon their backs, as if bringing in provisions, were directed to precede Church and his men, while the latter, close in the rear, and covered by the shadows of the guides, were to descend the rocks. The descent was found to be difficult; but by letting themselves down by the bushes, growing in the fissures of the rock, the party reached the bottom without alarming the Indians. Church, with a hatchet in his hand, seized the arms at the feet of Annawon, who, starting up on end, cried out, *Hawah!* and, despairing of an escape, fell back in his couch. After the arms were secured, parties went to the other Indians, informing them their chief was a prisoner, and that if they would submit, their lives should be spared; the whole readily complied with the terms, and all appeared cheerful. Church now inquired of Annawon what he had for supper; for said he, 'I have come to sup with you.' The chief in a loud voice ordered his women to prepare one, and inquired of his conqueror whether he would choose *cow*, or *horse beef*; Church replied, *cow beef*, and the supper was soon prepared, and all ate heartily. After suitable guards were posted, the Indians lay down, and Church attempted a short repose, near his captured chief; but neither slept: some time had elapsed in silence, when Annawon rose from his couch, and slowly retired into the woods. Church, apprehensive of some hostile design, drew near to Annawon's son, and prepared for the worst. At length the chief returned with a pack, placed it on the ground, and, falling on his knees, said—'Great captain, you have killed Philip, and conquered his country; I believe that I and my company are the last who war against the English; I suppose the war is ended by your means.' Then, opening the pack, he drew out a belt, curiously wrought with wampum in various figures, of flowers, birds, and beasts, which, when hung upon the captain's shoulders, reached to his feet. Another belt of wampum was next taken out, wrought in the same manner, which was worn on the head of the warrior, hanging down the back, to which two flags appended, waving behind. A third, with a star, and edged with red hair, was taken out, which, when hung upon the neck, descended to the breast. These, with two horns of glazed powder, and a red cloth blanket, constituting the royal dress of Philip, were presented to Capt. Church, who, Annawon said, had 'won them, and he was happy in having an opportunity of delivering.'

"The remainder of the night was spent in free conversation, in which the captured chief recounted his various exploits in the present, as well as former wars under Philip's father. The next day Church marched his prisoners to Taunton, where he joined those that had been captured when Philip was killed, and had been ordered to that town. Annawon, with another chief, was perfidiously put to death at Boston, not long after. A few more exploits of Capt. Church, in which a number of the Indians were captured, and the few remaining tribes submitted, ended the war in this quarter.

"In this predatory war, it is estimated that about six hundred of the inhabitants of New England were either killed in battle, or otherwise cut off by the enemy; twelve or thirteen towns entirely destroyed, and about six hundred buildings, chiefly dwelling-houses, consumed by fire. Rarely was a family to be found, who had not lost some of its members or relations. Dr. Trumbull estimates the loss much greater. 'The histories of those times,' he observes, 'rarely mention the barns, stores and out-houses burned; and sometimes there is notice of the burning of part of a town, and of the buildings in such a tract, without a specification of the number. All the buildings in Narraganset, from Providence to Stonington, a tract of about fifty miles, were burned, or otherwise destroyed by the enemy; but the number is not mentioned. The loss of buildings must therefore have been much greater than has been mentioned.' And he concludes that about one fencible man in eleven was killed, and every eleventh family burnt out; or that an eleventh part of the whole militia, and of all the buildings of the *United Colonies*, were swept off by the war.

"The war, though attended with great loss on the part of the English, was not less disastrous to the Indians; for they not only lost great numbers, but their lodges were destroyed, and, in short, their country conquered. Whether the contest might have been avoided by the English remains a question of doubtful solution. That they were averse to it, and had avoided any new cause of complaint on the part of the Indians, is obvious from a view of the history of prior events. The opinion, therefore, of many of the people of the present day, 'that the lands in New England were taken from the natives by force, and that the war on the part of Philip was just,' is to be embraced with some limitation. In most cases, the first settled towns were purchased of the sachems residing at the places selected by the English. In many old towns, deeds given by them are now extant, containing considerations for the lands sold, though generally of little value. To prevent injustice, the purchasers were restricted by government. In Massachusetts, none were allowed to take deeds of the Indians, excepting under certain conditions; and

Plymouth colony put similar checks upon their people. Governor Winslow, in a letter dated Marshfield, May 1st, 1676, makes the following statement: 'I think I can clearly say, that before the present troubles broke out, the English did not possess one foot of land in this colony, but what was fairly obtained by honest purchase of the Indian proprietors: Nay, because some of our people are of a covetous disposition, and the Indians are in straits, easily prevailed with to part with their lands, we first made a law that none should purchase, or receive of gift, any lands of the Indians without the knowledge and allowance of our Court; and a penalty of a fine of five pounds per acre, for all that should be so bought or obtained. And lest yet they should be streightened, we ordered that Mount Hope, Pocasset, and several other necks of land in the colony, because most suitable and convenient for them, should never be bought out of their hands. And our neighbours, at Rehoboth and Swanzy, although they bought their lands fairly of this Philip and his father and brother, yet because of their vicinity, that they might not trespass upon the Indians, did at their own cost set up a very substantial fence quite across that great neck between the English and Indians, and paid due damage, if at any time any unruly horse or other beast broke in and trespassed. And for divers years last past, (that all occasion of offence in that respect might be prevented,) the English agreed with Philip and his, for a certain sum yearly, to maintain the said fence, and secure themselves. And if at any time they brought complaints before us, they had justice impartial and speedily, so that our own people have frequently complained, that we erred on the other hand in showing them our favour.' One question only relating to the titles remains, and this is, whether the sachems who executed the deeds, possessed full power to transfer the lands? But this seems not to have been doubted at that time."

Lovewell's Fight.—1725.

"In the eastern quarter, scouts were also vigilant. Capt. John Lovewell, of Dunstable, raised a volunteer corps, in the early part of the winter 1724, to penetrate the woods in search of the enemy. With a small party he had killed one and captured another, to the northward of Winnipiseogee Lake, and received the bounty from government. The same winter, he made a second expedition into the northern wilderness, surprised and killed ten Indians, as they were sleeping at a fire by the margin of a frozen pond, since known by his name, in the town of Wakefield, in New Hampshire. Lovewell and his party received out of Massachusetts treasury one thousand pounds for the ten scalps.

"Elated with his success, on the twenty-sixth of April, 1725, he marched on his third expedition, with a design of surprising the villages of Pigwacket, on the upper part of the River Saco, in what is now the town of Fryeburg, in the western part of Maine; having under his command forty-six men, including a chaplain, surgeon, and four commissioned officers. On the march, two men, falling sick or lame, were dismissed, with one man to accompany them. Arriving at Ossipee Pond, another man becoming sick, Lovewell built a small stockade fort, and left his surgeon, a sergeant, and seven men, with a quantity of provisions. Reduced now to thirty-four men, Lovewell continued his march for Pigwacket, and encamped on the east side of a pond, not far from his place of destination, on the evening of the seventh of May. Uncommon noises in the night induced a belief that the Indians were about the camp, and in the morning, the report of a gun, and discovery of an Indian on a jutting point of land, convinced Lovewell that his conjecture was not without foundation. Suspecting that the Indian on the point had been placed as a decoy, and that a body of the enemy might be in the front, the men deposited their packs in an open pine wood, near the N. E. angle of the pond, and advanced towards the Indian, distant between one and two miles. Immediately after their departure, forty-one Indians, who were returning from an expedition down the Saco, under two noted leaders, Pagus and Waha, discovered Lovewell's trail, and, following it, found and seized the packs, and, upon counting them, ascertained that his force was numerically inferior to their own; they then planted an ambuscade on the spot, ready for an attack. Lovewell, in the mean time, pressing on towards the Indian, met him returning, who immediately discharged his gun, and wounded Lovewell, and Samuel Whitney, with beaver shot; on which Ensign Wyman fired, killed him, and took his scalp. No other enemy being discovered, Lovewell retraced his march to the place where the packs had been left, and found they were missing; a search was commenced, on which the Indians rose, and with a horrid yell, rushed on and gave their fire; the English met them, and fired nearly at the same time, and a severe conflict ensued, but the Indians were driven a little back. Capt. Lovewell, Ensign Harwood, Sergeant Fulham, John Jeffs, Jonathan Kitridge, Daniel Woods, Ichabod Johnson, Thomas Woods, and Jonah Davis, were killed. Lieut. Farwell, Lieut. Robbins, and Robert Usher, were wounded. The survivors, with the wounded, then fell back to the pond, and took a position where a point of rocks secured the left, and an unfordable brook the right, a morass stretching along part of the front; and covering themselves behind trees, they renewed the attack on the enemy, who had now pressed closely on, and open-

ed their fire with great spirit. Ensign Seth Wyman, who now commanded, resolving to maintain his position to the last extremity, continued his fire with great spirit, and several of his men were soon badly wounded. Every art was essayed by the enemy to induce the English to surrender; but disregarding them, they continued their fire with destructive effect. Towards night, the yells and fire of the Indians became less frequent, from which it was concluded they were about to draw off, and the conjecture proved correct; for, after collecting their killed and wounded, they disappeared about sunset, leaving the bodies of Lovewell and others, who fell in the first attack, unscalped. The loss of the Indians was supposed to be severe; among which, it was afterwards ascertained, was the chief, Pagus.

"On collecting his shattered remnant, Wyman found Lieut. Robbins, Jacob Farrar, and Robert Usher, so badly wounded that they could not be removed. Lieut. Robbins, conscious of his fate, requested his companions to load his gun, that he might despatch another of the enemy, should they return to the spot. Among those who were less severely wounded, were Lieut. Farwell, Mr. Frie, the chaplain, Sergeant Johnson, Josiah Johnson, Timothy Richardson, Samuel Whiting, Elias Baron, John Chamberlain, Isaac Lakin, Eleazer Davis, and Josiah Jones. Solomon Kies had fortunately escaped, though badly wounded. At the rising of the moon, about midnight, the wounded men, conducted by nine others, viz. Ensign Wyman, Edward Lingfield, Thomas Richardson, Eleazer Melvin, David Melvin, Ebenezer Ayer, Abiel Asten, Joseph Farrar, and Joseph Gelson, began their march for Ossipee Pond. After travelling about a mile, Mr. Frie, Lieut. Farwell, Davis and Jones of the wounded, unable to proceed, were left in the woods. The remainder pursued their march. Before arriving at the fort at Ossipee Pond, three Indians were seen, which produced an alarm and some disorder; and Elias Baron, one of the wounded, straggling from his party, was lost in the woods. On arriving at the fort, it was found to be abandoned by the guard; but a small quantity of provisions was fortunately left. It afterwards appeared that one man, at the commencement of the action, had deserted, and, on reaching the fort, informed the garrison that Lovewell and his company had been cut off; on which the guard made a precipitate retreat. Wyman, after refreshing his men, marched for home, but was compelled to leave several others of his wounded. Lieut. Farwell,

and the chaplain, Mr. Frie, perished in the woods; the others arrived home in scattered parties, after enduring the severest sufferings, and several of the wounded afterwards came in. Col. Tyng, of Dunstable, soon after, collecting a party of volunteers, proceeded to the scene of action; found and buried the bodies of the slain, and left their names carved upon trees. A generous provision was made by government for the widows and children of the slain.

"In this desperate affair, Solomon Kies, of Billerica, in Massachusetts, having fought until he had received three wounds, and lost much blood, crept to Ensign Wyman, and stating his situation, told him he was inevitably a dead man; but having strength left to creep along the side of the pond, where he intended to secure himself from the scalping-knife, he fortunately found an Indian canoe, and with much difficulty rolled himself into it, and pushing it off, the wind wafted him several miles towards the fort. He then crept to land, and finding his strength increased, continued his route, and reached the fort, and at last got home and was cured of his wounds.

"Mr. Jonathan Frie, the chaplain, was from Andover, only son of Capt. Frie of that place; he had but recently received his degree of bachelor of arts at Cambridge. Not long after being left by Ensign Wyman, in company with Lieut. Farwell, Davis and Jones, he found himself about to expire, and, unwilling to retard the march of his companions, requested them to leave him to his fate; with which they reluctantly complied. He had kept a journal of the march of Lovewell's company, which was lost with him. Capt. Lovewell, Lieutenants Farwell and Robbins, and Ensign Harwood, belonged to Dunstable; Ensign Wyman to Woburn. Of the seven from Dunstable, all were killed or wounded."

AMERICAN HISTORIANS WHO HAVE TREATED OF THE INDIANS.

Hubbard's History of Indian Wars. Church's History of Philip's War. Penhallow's Indian Wars. Symmes' Sermon on Lovewell's Fight. Colden's History of the Five Nations. De Witt Clinton's papers. Hoyt's History of the Indian Wars. Thatcher's Indian Biography. The histories of the several states of the Union abound in notices of the Indians. As objects of philosophical curiosity, they have engaged the pens of many able writers, among whom may be named, with distinction, Duponceau, Pickering, Schoolcraft, M'Kenney, Catlin, and Cass.

BOOK V.

TOPOGRAPHY.

CHAPTER I.

NEW ENGLAND :—NEW HAMPSHIRE—VERMONT—
MASSACHUSETTS—RHODE ISLAND—CONNECTICUT.

IT is our design in this, the closing department of our work, to give a concise but clear account of the situation, extent, natural and physical geography, internal improvements, manufactures and commerce, education, religion, civil divisions, and population of each state. We trust the former portions of this volume have conveyed a correct idea of the state of the republic generally, and would enable an inquirer to determine on the propriety of a removal thither; alike correcting unjust prejudices and unreasonable expectations, and preventing disappointment on his arrival in the transatlantic world. The remaining pages will afford, to a considerable extent, such an outline of the local peculiarities of the several states of which the Union is composed, as may in some degree enable the emigrant to select that section of the country most suited to his circumstances and pursuits. We shall commence with the most northern state, deeming a geographical preferable to an alphabetical arrangement. We have not attempted, however, any classification; as we agree with Mr. Darby, when he says, "Many arbitrary subdivisions have been attempted, with a view to simplify the engrouping of the United States, but they have appeared to me in every instance productive of confusion. The artificial lines of the political subdivisions are drawn with so little regard to natural features, that all relative classification into eastern, western, southern, or central states, superinduces so many exceptions as to render the rule worse than dubious."

MAINE.

The State of Maine, is situated between $43^{\circ} 5'$ and $48^{\circ} 3'$ north latitude, and extends from $66^{\circ} 49'$ to $70^{\circ} 55'$ west longitude. It is bounded by Lower Canada on the north, New Brunswick on the east, the Atlantic on the south, and New Hampshire on the west. The map exhibits the positions in controversy between the governments of the United

States and Great Britain, respecting the extension of Maine beyond the sources of the St. Croix river. The decision by his Dutch majesty is generally considered to be unsatisfactory. The greatest length of Maine is, from south-west to north-east, 350; mean breadth, 92; and area, by the rhombs, 32,194 square miles.

The surface of this state differs essentially from any other part of the United States. The coast between Casco Bay and Passamaquoddy is excessively indented by long projecting points, and by innumerable islands, between which are discharged the fine streams of Kennebeck and Penobscot, with many others of less volume, affording an unequalled variety of harbours. Upon this very broken coast is poured a tide of from 20 to 40 feet. So powerful is the ocean swell, as to break the winter ice to fragments, and to preserve open the harbours of Maine, whilst those several degrees more southward are closed. The interior of the state is a congeries of hills of great variety of form, without any mountain ridges of much elevation or mass, with intervening lakes and streams. With Maine, indeed, commences that lake section of North America, which extends to the utmost known northern regions of the continent. Though not very elevated, the interior of Maine rises so rapidly from the sea-coast, as to preclude the flow of the tide far inland, though few other states of the Union are more completely traversed by navigable rivers.

Extending over 5° of latitude, and differing in level at least 800 feet, Maine presents at its extremes great diversity of climate: the air, however, in all parts of the country, is pure and salubrious. The summers in most parts are favourable to the growth of all the vegetable productions of the northern states. In some places, however, Indian corn, and some other plants of a more tender kind, are frequently injured, and sometimes destroyed, by frosts late in the spring and early in the autumn. The cold of winter is severe, yet the serenity of the sky, and the invigorating influence of the atmosphere, during the same season, make amends in some degree for the severity of the weather.

The tract of country along the sea-coast, from ten

to twenty miles wide, embraces all the varieties of sandy, gravelly, clayey, and loamy soils, frequently interspersed at short distances; seldom very rich, in many places tolerably fertile, but generally poor. Of this section, Indian corn, rye, barley, grass, &c., are the principal productions. In the tract lying north of this, and extending fifty miles from the sea in the western, eighty in the central, and ninety in the eastern part, the same kinds of soil are found, but they are less frequently diversified, and generally more fertile. The surface rises into large swells of generally good soil, between which, on the margin of the streams, are frequently rich intervals, and in other places sandy or gravelly pine plains, or spruce and cedar swamps. Of this section also the principal productions are grass, Indian corn, wheat, barley, rye, flax, &c. The country beyond the limits above specified is but little settled. It exhibits great diversities in the appearance of its soil, in the growth of timber, and in climate. The land on the Kennebeck, and between this river and the Penobscot, is accounted the best in the state. It is well adapted to the various purposes of agriculture, and as a grazing country it is one of the finest in New England.

Maine enjoys great facilities for commerce. All the settled parts of the country lie near a market, and the produce of the farmer is readily exchanged for money at a good price. The principal article of export is timber. Vast quantities of boards, shingles, clapboards, masts, spars, &c., are transported to the neighbouring states, to the West Indies, and to Europe. Much of the firewood consumed in Boston, Salem, &c., is brought from Maine. Dried fish and pickled salmon are considerable articles of export. Beef, pork, butter, pot and pearl ashes, and some grain, are also among the exports. Great quantities of lime are an-

nually exported from Thomaston. Limestone and bog-iron ore abound in many places. The principal manufactures consist of cotton and woollen cloths, hats, shoes, boots, leather, iron, nails, distilled spirits, and cordage.

Bowdoin College, in Brunswick, was incorporated in 1794. It has four professors, two tutors, about 120 students, a complete philosophical apparatus, and a library of nearly 5,000 volumes. The college is endowed with five townships of land. The Maine charity school at Bangor, was incorporated in 1814. Its design is to educate young men for the ministry in a shorter time than is usual at other seminaries. It is under the direction of two professors and a preceptor; and in 1818, had nineteen students. There is a Literary and Theological Institution under the direction of the Baptist denomination, at Waterville. It was opened in 1818, with twelve or fifteen theological students. Free schools are kept in every town. By a permanent law, each town is compelled to raise for this object a sum equal to forty cents for each individual, annually. The sum raised and expended is about 120,000 dollars.

The Baptists have 210 churches, 136 ministers, 22 licentiates, and 12,936 communicants; the Congregationalists, 156 churches, 107 pastors, and 9,626 communicants; the Methodists, 56 ministers, and 12,182 communicants; the Free-will Baptists, about 50 congregations; the Friends, about 30 societies; the Unitarians 12 societies, and 8 ministers; the Episcopalians, 4 ministers; the Roman Catholics, 4 churches; the New Jerusalem Church, 3 societies; and there are some Universalists.

Maine has recently turned great attention to science, literature, and the arts, since her incorporation as a distinct state of the union.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Population.	Distance. A.* | W.†	
Cumberland, s. w.‡	49,445	60,113	Portland§	12,601	53	542
Hancock, s.	17,856	24,347	Castine	1,155	78	676
Kennebeck, m.	40,160	52,491	Augusta	3,980		595
Lincoln, s.	46,843	57,181	{ Wiscasset	2,443	24	589
			{ Topsham	1,564	31	569
			{ Warren	2,030	44	617
Oxford, w.	27,104	35,217	Paris	2,337	42	581
Penobscot, n.	13,870	31,530	Bangor	2,868	66	661
Somerset, n. w.	21,787	35,788	Norridgewock	1,710	28	623
Waldo, s.	22,253	29,790	Belfast	3,077	40	641
Washington, e.	12,744	21,295	Machias	1,021	143	745
York, s. w.	46,283	51,710	{ York	3,485	99	500
			{ Alfred	1,453	86	513
Total	298,335	399,462				

* From Augusta.

† From Washington.

‡ The small capital letters annexed to the counties indicate their situation in the several states; as, E., W., N., S., N. E., N. W., E. M., &c., east, west, north, south, northeast, north of middle, east of middle, &c. The seats of government of the different states are also printed in small capitals.

§ Portland has heretofore been the seat of government; but Augusta becomes the political metropolis this year, 1832.

Portland, the capital of the state, and much the largest town, is situated on a peninsula in Casco Bay. It is well located for commerce, having an extensive and thriving back country, and one of the finest harbours on the continent, being deep, safe, capacious, easy of access, and seldom frozen over. The amount of shipping in 1818, was 27,770 tons. Brunswick is thirty miles north-east of Portland, on the Androscoggin, at the falls; population in 1820, 2,954. Bath is on the west side of Kennebeck river, at the head of winter navigation, sixteen miles from the sea, and thirty-five north-east of Portland. It owns more shipping than any town in the state, except Portland. Wiscasset is on the Sheepscot, eight miles north-east of Bath. The river is navigable to this place for the largest vessels, and the harbour is generally open throughout the winter. Waldoborough, twenty-two miles east of Wiscasset, has a large amount of shipping, employed principally in the coasting trade. Castine is on a promontory, on the east side of Penobscot Bay. It has an excellent harbour for any number of ships of the largest size, and is accessible at all seasons of the year. It has great strength from its natural situation, and, if proper batteries were erected, might almost bid defiance to attack. These circumstances, together with its favourable situation for the entry of prizes, and, above all, its geographical position, enabling it to communicate by a few days' sail with Halifax, and, by a short route up the Penobscot, with Quebec, giving a command of all the intermediate country from the Penobscot to the St. Croix, render it of the highest consequence as a military station. Bangor is a flourishing town, thirty-five miles north of Castine, on the west side of the Penobscot. It is finely situated for commerce, being at the head of the navigation on the largest river in the state. Machias is near the south-east corner of the state, on Machias Bay, at the mouth of the Machias river. It is a thriving town, and exports large quantities of boards, shingles, spars, &c. There are twenty-six saw-mills in the town, which cut on an average upwards of 10,000,000 feet of boards annually. Lubeck, or Eastport, is a new and flourishing town, on a peninsula at the southern extremity of Passamaquoddy Bay. York is an ancient town on the coast, near the south-west extremity of the state. Hallowell is a flourishing town on Kennebeck river, more than forty miles from its mouth. Vessels of 150 tons ascend to this place. Augusta is two miles above Hallowell. The most flourishing towns on the Kennebeck, above Augusta, are Vassalborough, Waterville, and Norridgewock.

Sullivan has written a work on the District of

Maine, and Williamson's history of Maine may be consulted with profit.

NEW HAMPSHIRE.

New Hampshire has Canada for its northern boundary, Maine for its eastern, Massachusetts on the south, and Vermont on the west;* the Atlantic washes its south-eastern coast for a distance of twenty-nine miles. The mean length of New Hampshire is very nearly that of its difference of latitude, two and a half degrees, or about 174 statute miles; area, 8,700 square miles; and mean breadth, fifty miles.

This state, for its narrow extent, differs more in relative elevation than any other state of the Union and, of course, the extremes of temperature are in correspondent excess. The Atlantic border is generally a sandy beach, but followed by so rapid a rise in the surface of the interior country as to arrest the tides within twenty miles from the ocean. The mountains of the state are central, with a zone of finely diversified hill and dale country around. Grand Monadnoc rises to an elevation of 3,254 feet; Moosehillock to 4,636 feet; but some of the summits of the White Mountains attain to 7,300 feet, and are considerably the most elevated masses of the Apalachian system. As a whole, the physiognomy of New Hampshire is bold, prominent, and often sublime. The White Mountains are frequently visited by travellers. Mount Washington is usually ascended from the south-east. After climbing the side of the mountain for some distance, the forest trees begin to diminish in height, till, at the elevation of about 4,000 feet, you come to a region of dwarfish evergreens, about the height of a man's head, which put forth numerous branches, and surround the mountain with a formidable hedge a quarter of a mile in thickness. On emerging from this thicket, you are above all woods, at the foot of what is called the bald part of the mountain, which is very steep, and consists of a huge pile of naked rocks. After attaining the summit, the traveller is recompensed for his toil, if the sky be serene, by a most noble and extensive prospect: on the south-east there is a view of the Atlantic ocean, the nearest part of which is sixty-five miles distant, in a right line: on the south, Winnipiseogee Lake lies in full view; on the south-west is the lofty summit of Moosehillock, and far away in the horizon, is the Grand Monadnoc. The barren rocks which extend a great distance in every direction from the summit add a melancholy cast to the grandeur of the scene. The Notch, or Gap, in the White Mountains, is also frequently

* Longitude, 70° 40' to 72° 28'; latitude, 42° 41' to 45° 11'.

visited as a curiosity. It is on the west side of the mountains, near the source of Saco River. It is a deep and narrow defile, in one part only twenty-two feet wide. The mountain appears as if cloven quite to its base, perpendicularly on one side, and on the other at an angle of forty-five degrees. The road which has been made through this pass is crossed by the river Saco, which rushes rapidly down the sides of the mountain, and gives a picturesque effect to the scenery. Bellow's Falls are in Connecticut River, at Walpole. The whole descent of the river, in the space of 100 rods, is forty-four feet: there are several pitches, one above another, at the highest of which a large rock divides the stream into two channels, each about ninety feet wide. When the water is low, the eastern channel is dry, being crossed by a bar of solid rock; and the whole stream falls into the western channel, where it is contracted to the breadth of sixteen feet, and flows with astonishing force and rapidity. A bridge is built over these falls, under which the highest floods pass without detriment to the structure.

The state of New Hampshire is subject to the extremes of heat and cold, but the air is generally pure and salubrious. Morning and evening fires become necessary from about the middle of September; cattle are housed from the middle of November; and, in the course of this month, the earth and rivers generally become thoroughly frozen, and covered with snow. The open country is usually cleared of snow in April; but, in the woods, it very often lies in the northern part of the state till May.

There is a great variety of soil in this state; a considerable proportion is fertile, and it is generally better adapted to grazing than tillage. The interval lands on the large rivers are esteemed the most valuable; these produce various kinds of grain in great abundance; but the uplands of an uneven surface, and of a rocky, warm, moist soil, are accounted the best for grazing. The principal articles of produce are beef, pork, mutton, butter, cheese, wheat, rye, Indian corn, oats, barley, pulse, and flax. The number of neat cattle, in 1812, was calculated at 211,534; horses, 32,161; sheep, 364,892. Apples are abundant, and no good husbandman thinks his farm complete without an orchard; other kinds of fruit are not extensively cultivated.

The principal articles of export are lumber, fish,

beef, pork, horses, neat cattle, sheep, flax seed, and pot and pearl ashes. The manufactures of New Hampshire have of late greatly increased. There are now upwards of thirty cotton and woollen manufactories, and nine or ten paper-mills; there is a glass manufactory in Keene, incorporated in 1814; there are establishments for the manufacture of iron in Franconia; there are, also, several furnaces for casting iron, hollow ware, &c. Among the towns where the most considerable manufacturing establishments are situated, are Exeter, Dover, Peterborough, Franconia, Pembroke, New Ipswich, Keene, &c.

Dartmouth College, at Hanover, was founded in 1769. Its officers are a president, seven professors, a lecturer on chemistry, a lecturer on anatomy, and two tutors. It has a good chemical apparatus, a philosophical apparatus, a valuable anatomical museum, and a library of about 4,000 volumes, besides two large society libraries belonging to the students. The funds of the college yield about 1,600 dollars a year, which, with the tuition, makes an annual income of about 4,000 dollars. The number of students is usually about 150, besides more than sixty medical students. The college takes its name from the earl of Dartmouth, one of its earliest and most generous benefactors. Phillip's Exeter Academy, at Exeter, was founded by the Hon. John Phillips, LL. D., in 1781. It is one of the oldest and most flourishing academies in New England. It has funds amounting to about 80,000 dollars; a library of about 700 volumes, and a handsome philosophical apparatus. Its officers are a principal, a professor of mathematics and natural philosophy, and an assistant. The funds are appropriated, in part, to the support of indigent students.

The Congregationalists have 146 churches, 116 ministers, and 12,867 communicants; Baptists, 75 churches, 61 ministers, and 5,279 communicants; Free-will Baptists, 67 churches, 51 ministers, and 4 or 5,000 communicants; Methodists, 30 ministers, and 3,180 communicants; Presbyterians, 11 churches, 9 ministers, and 1,499 communicants; Christians, 17 ministers; Friends, 13 societies; Universalists, about 20 congregations; Unitarians, 10 ministers; Episcopalians, 8 ministers; Catholics, 2 churches; Shakers, 2 societies; and the Sandemanians, 1 society.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Population.	Distance.	
					C.*	W.†
Rockingham, s. e.	40,526	44,452	{ Portsmouth	8,082	45	491
			{ Exeter	2,759	39	474
			{ Dover	5,449	40	490
Strafford, e.	51,415	58,916	{ Gilmanton	3,816	20	500
			{ Gilford	1,872	30	504
			{ Rochester	2,155	40	500
Merrimack, m.	32,743	34,619	Concord	3,727		474
Hillsborough, s.	35,781	37,762	Amherst	1,657	30	448
Cheshire, s. w.	26,753	27,016	Keene	2,374	55	431
Sullivan, w.	18,628	19,687	Newport	1,913	40	467
Grafton, w.	32,989	38,691	{ Haverhill	2,153	07	509
Coos, n.	5,151	8,390	{ Plymouth	1,175	40	515
			Lancaster	1,187	116	558
Total	244,161	269,535				

POPULATION AT DIFFERENT PERIODS.

Population.		Population.				Increase.	Slaves.
In 1701,	10,000	In 1790,	141,885				158
1730,	12,000	1800,	183,858	From 1790 to 1800,		41,973	8
1749,	30,000	1810,	214,460	1800	1810,	30,602	0
1767,	52,700	1820,	244,161	1810	1820,	39,701	0
1775,	80,038	1830,	269,533	1820	1830,	25,372	0

Portsmouth, the largest town in the state, is on the sea-coast, near the mouth of the Piscataqua. The harbour is one of the best on the continent, having sufficient depth of water for vessels of any size, being easy of access, protected from every wind, and, owing to the rapidity of the tide, never frozen. It is so well fortified by nature, that only a small expense is necessary to render it perfectly secure from attack. On an island in the Piscataqua, opposite the town, a United States navy-yard has been established. Concord, the capital of the state, is a flourishing town on the Merrimack, at the head of navigation, and well situated for trade. Much of the produce of the upper country is brought here, and carried down the Merrimack and the Middlesex Canal, to Boston. Dover is a flourishing town, at the head of the tide on the Cocheco, twelve miles north-west of Portsmouth. Exeter is a manufacturing town, at the head of the tide on Exeter River, fourteen miles south-west of Portsmouth. Keene is a pleasant town, in the south-west part of the state on the Ashuelot. The principal towns on Connecticut River, are Walpole, thirteen miles north-west of Keene; Charlestown, twelve miles north of Walpole; Hanover, the seat of Dartmouth College; Haverhill, twenty-seven miles north of Hanover, and Bath, adjoining Haverhill, at the head of boat navigation.

A valuable history of New Hampshire was written by the excellent Dr. Belknap.

VERMONT.

Like the two preceding states, Vermont is bounded on the north by Lower Canada. Its eastern bound-

ary is the Connecticut River, which divides it from New Hampshire. It has the state of Massachusetts on the south, and of New York on the west.† Its length is 157 statute miles, mean width fifty-nine miles, area 9380 square miles.

Vermont is composed of two not very unequally inclined planes, with a chain of comparatively high mountains, extending the whole length of the state; in a direction north-north-east and south-south-west. Onion, La Moelle, and Massisque rivers, all rise to the east of the high grounds, and pierce the Green Mountains in their western course into Lake Champlain: Otter River, on the contrary, rises west of the main chain, near the south-west angle of the state, and flows north-north-west into Lake Champlain. The water-courses of the eastern slope of Vermont enter the Connecticut River, and have a brief course. Lake Champlain is only ninety feet elevated above the Atlantic tides. It is probable that many cultivated parts of Vermont are at least 1,000 feet; giving a difference in temperature of between two and three degrees of Fahrenheit, from change of level.

The climate is healthy, but subject to great extremes of heat and cold. Winter in its severity commences about the first of December, and continues till about the middle of March. During this season the weather is generally fair, and the cold more uniform and steady than in the other New England states. A large proportion of the soil in this state is fertile, and fitted to the various purposes of agriculture. It is generally deep, of a dark colour, rich.

* From Concord. † From Washington.
‡ Longitude, 71° 33' to 73° 26'; latitude, 42° 44' to 45°.

moist, warm, loamy, and seldom parched with drought. The low lands on the intervals are thought the best: bordering on these is usually a strip one or two miles wide, comparatively poor; beyond which the land recovers a fertility nearly equal to that on the rivers. Much of the land among the Green Mountains is excellent for grazing, and here are found many fine farms. Iron ore of good quality is found in several places. There are quarries of marble at Middlebury, Bennington, Arlington, Shaftsbury, Pittsford, and Swanton. There are also some lead and copperas mines. Wheat is extensively cultivated, particularly on the west side of the mountains. Barley, rye, oats, peas, and flax, flourish in all parts of the state. Corn thrives best on the intervals, but is also raised in abundance on the uplands. Large quantities of maple sugar are made in Vermont for home consumption, and some for exportation.

The exports of Vermont consist of pot and pearl ashes, beef, pork, butter, cheese, flax, live cattle, &c. The trade is chiefly with Boston, Hartford, New York, and Montreal. There are twelve paper-mills in the state. Among the most considerable manufacturing towns, are Middlebury, Bennington, Brattleborough, Burlington, and Montpelier. A company has been recently incorporated, and the stock taken up, for constructing a rail-road from Bennington in this state, to Troy in New York.—Manufactures have greatly increased in Vermont. In 1825 there was

said to be upwards of 100 manufacturing companies. 800 tons of copperas were manufactured at the mines in Stafford, in 1826.

There are two colleges, one at Burlington, the other at Middlebury. The University of Vermont at Burlington, was incorporated in 1791, and has been liberally patronised by the state. It has a library of about 1,000 volumes, and a philosophical apparatus which is tolerably complete. The funds consist principally of lands, amounting to about 40,000 acres, and yielding at present an income of about 1,200 dollars. On the 27th of May, 1824, the buildings of the college at Burlington were unfortunately destroyed by fire: but the library and part of the philosophical apparatus were saved.—Middlebury College was incorporated in 1800, and has been supported entirely by private bounty. It has a president, five professors, and two tutors, a library of more than 1,200 volumes, a valuable philosophical apparatus, and more than 100 students.

The Congregationalists have 13 associations, 203 churches, 110 pastors, 35 unsettled ministers, 10 licentiates, and 17,236 communicants; the Baptists, 105 churches, 56 pastors, 8 licentiates, and 8,478 communicants; the Methodists, 44 ministers and 8,577 communicants; the Episcopalians, 15 ministers; the Unitarians, 3 societies and 1 minister; and there are some Free-will Baptists, Christians, and Universalists.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Population.	Distance. M. • | W. †	
Addison, w.	20,469	24,940	Middlebury	3,468	56	483
Bennington, s. w.	16,125	17,470	{ Bennington	3,419	119	414
Caledonia, n. e.	16,669	20,967	{ Manchester	1,525	98	434
Chittenden, w.	16,055	21,775	Danville	2,631	30	538
Essex, n. e.	3,284	3,981	Burlington	3,526	38	515
Franklin, n. w.	17,192	24,525	Guildhall	481	78	564
Grand Isle, n. w.	3,527	3,696	St. Albans	2,375	64	541
Orange, e.	24,651	27,285	North Hero	638	68	545
Orleans, n.	6,976	13,980	Chelsea	1,958	23	506
Rutland, w.	29,983	31,295	Irasburgh	860	49	568
Washington, m.	14,113	21,394	Rutland	2,753	67	462
Windham, s. e.	28,659	28,758	MONTPELIER	1,193		524
Windsor, e.	38,233	40,623	Newfane†	1,441	108	436
			{ Windsor	3,134	59	469
			{ Woodstock	3,044	48	476
Total	225,764	280,679				

POPULATION AT DIFFERENT PERIODS.

Population.		Increase.		Slaves.
In 1790,	85,539			16
1800,	154,465	From 1790 to 1800,	68,926	0
1810,	217,895	1800	1810,	63,430
1820,	235,764	1810	1820,	17,869
1830,	280,679	1820	1830,	44,915

* From Montpelier.

† From Washington.

‡ The name of the village in which the county buildings are situated is Fayetteville.



BOSTON-HOUSE, BOSTON

Montpelier, the capital, stands in a most picturesque valley on Onion River, near the centre of the state, at the point of intersection of several principal roads. Newbury is a pleasant town on Connecticut River, opposite Haverhill in New Hampshire, and thirty-four miles east-south-east of Montpelier. Windsor is on Connecticut River, sixty miles south of Montpelier. It is a place of considerable business, and contains the state prison. Brattleborough is on Connecticut River, forty-three miles below Windsor, and near the southern boundary of the state. Bennington is near the south-west corner of the state: it is one of the oldest towns in Vermont, and is famous for the battle of August, 1777. Rutland is on Otter Creek, fifty-seven miles north of Bennington, and forty-five west of Windsor. Middlebury, the seat of Middlebury College, is pleasantly situated on Otter Creek, at the falls, twenty miles from the mouth of the river. In the vicinity of the falls are numerous mills and manufacturing establishments. An extensive quarry of fine marble was discovered in 1804, on the bank of the creek, near the centre of the village. It is now wrought into tombstones, mantel-pieces, sideboards, &c., and transported to various parts of the country, to the amount of seven or eight thousand dollars annually. Vergennes is on Otter Creek, at the Lower Falls, six miles from the mouth of the river, and thirteen below Middlebury. It is at the head of navigation, and has several mills and manufactories, and considerable trade. Burlington, the seat of Vermont University, stands on a most beautiful harbour on Lake Champlain, near the mouth of Onion River. It is on elevated ground, commanding a noble view of the lake and the adjacent country. It carries on considerable trade on Lake Champlain. Almost all the vessels which navigate the lake are owned here. St. Albans is a flourishing town on Lake Champlain, near the north-west corner of the state.

See Letters on Vermont, by John L. Graham, LL.D. An admirable history of Vermont, in two volumes, 8vo. was published by Dr. Williams. Governor Chittenden, of this state, has also published a Commentary on the Principles of the Constitution of the United States, &c.

MASSACHUSETTS.

This state is bounded by New Hampshire and Vermont on the north; by the Atlantic from the north-east to the south-east; by Connecticut and Rhode Island on the south; and by New York on the west.* From Plymouth harbour to the south-west angle is about 145

miles; area, 7,335 miles; mean width, about fifty miles. Massachusetts presents three distinct zones. The first towards the Atlantic Ocean is a marine alluvion but little elevated above the ocean. This eastern plain is quickly and abruptly followed by a fine hilly tract, which crosses the state from north to south, and from which the rivers are poured in every direction. The second or middle zone includes part of the beautiful valley of Connecticut, and is followed by the mountainous but highly fertile county of Berkshire, which comprises the whole western part of the state. The eastern or sandy border is the least fertile, but also the least extensive of the three sections. Within the sandy tract the country rises by so abrupt an acclivity, as to prevent the tides penetrating in any place more than a few miles. It has been already noticed that the peninsula of Cape Cod, which forms the eastern part of this state, is the great dividing limit of the Atlantic tides, and that a very rapid increase of depth is found within the bay of Massachusetts. Taken at one view, the surface of this state swells from the Atlantic to the hills, then sinks into the richly decorated valley of Connecticut, and again rises into the mountain region of Berkshire.

The climate of Massachusetts, as affected by the elevation of the ground, varies from east to west. The cultivated parts of the county of Berkshire rising to a height of from 500 to 1,000 feet, there is a marked difference between the seasons here, and those on the Hudson and Connecticut rivers in equal latitudes.

"I have seen," says Mr. Darby, "the spring opening at Albany whilst snow covered the vales of Berkshire."

The soil is exceedingly various, comprising every description, from the most fertile to the most unproductive. In the south-eastern part it is mostly light and sandy, interspersed, however, with numerous fertile tracts. In the middle and northern part, towards the sea-coast, it is of a much better quality, though not generally distinguished for natural fertility; but, by excellent cultivation, a great portion of it is rendered highly productive. The middle and western parts have generally a strong, rich soil, excellent for grazing, and suited to most of the purposes of agriculture. The state is almost universally well watered, and the streams of every description are remarkably clear and beautiful. The farms generally consist of from 100 to 300 acres, and are for the most part well cultivated. In no part of the United States have greater advances been made in agricultural improvement, than in Massachusetts. The country is intersected in every direction by roads, which are kept in a good state of repair. The principal productions are, Indian corn, rye, wheat, oats, barley, peas, beans

* Longitude, 69° 50' to 73° 10'; latitude, 41° 23' to 43° 52'.

duckwheat, potatoes, hops, flax, and hemp. Beef, pork, butter, and cheese, are abundant in most parts of the state, and of excellent quality; the county of Berkshire, in particular, is distinguished for its extensive dairies. The state abounds with orchards; and great quantities of cider are annually made, which is the common beverage of the inhabitants. The principal cultivated fruits are apples, peaches, pears, quinces, plums, cherries, and currants. Gardening is an object of attention throughout the state; and all the vegetables suited to the climate, together with a variety of domestic fruits, are extensively cultivated.

The principal mines are those of iron, which is found in various parts; and there are numerous establishments for manufacturing it. The counties of Plymouth and Bristol afford great quantities of this mineral, and there are several rich iron mines in Berkshire. Lead is found at South Hadley, and at some other places. Ochre, and other fossil productions have been found in various places. Quarries of good marble are wrought in Lanesborough, Stockbridge, Pittsfield, Sheffield, and several other places in Berkshire. There are quarries of slate at Lancaster, Harvard, and Bernardston; and of soapstone at Middlefield. Limestone is found in great abundance in the county of Berkshire, and freestone in all parts of the state. Beautiful granite for building is obtained from Chelmsford and Tyngsborough.

Massachusetts has a greater number of inhabitants engaged in commerce than any other state in the union. The greatest part of the fisheries in the United States belong to this state. The principal articles of export are fish, beef, pork, lumber, ardent spirits, flax seed, whale oil, spermaceti, and various manufactures. This state also holds a high rank in point of manufactures. The most considerable are those of cotton cloths, boots and shoes, ardent spirits, leather, cordage, wrought and cast iron, nails, woolens, straw bonnets, hats, cabinet work, paper, oil, and muskets. There is an extensive national establishment for the manufacture of arms at Springfield.

Not having natural facilities of intercourse with the interior country, the inhabitants of Massachusetts Bay have long since turned their attention to the formation of artificial channels of communication; one of which, the Middlesex Canal, has been effected, though very imperfectly constructed. The canal, twenty-seven miles long, leaves the Merrimack River above its lower falls, and terminates at Charlestown, opposite Boston. The water in the canal is thirty feet wide at the surface, twenty at the bottom, and

three feet deep. Concord River crosses the line of the canal on the summit-level, twenty-two miles from Charlestown, and five from the junction of the canal with the Merrimack; and thus an ample supply of water is afforded for lockage in both directions. Round the falls in Connecticut River, at South Hadley, there is a canal cut through the solid rock, more than forty feet deep, and 300 feet long. There are other falls on the Connecticut, above and below South Hadley, which have been overcome by canals, dams, and other improvements, so that the river is now navigable for boats through the whole of its course in this state, and as high as Bath in New Hampshire. A canal from Buzzard's Bay to Barnstable Bay, through the isthmus of Cape Cod, has long been in contemplation, and in 1818 a company was incorporated to carry it into execution. It is intended that the canal shall be of a suitable depth for vessels drawing ten feet of water. Several companies have been recently incorporated by the legislature of this state, for the purpose of constructing rail-roads. Most of these are projected from Boston as a centre, and are to extend to Worcester, to the river Hudson, to Connecticut River, to Providence, by Pawtucket, to Taunton, to Lowell, and to Lake Ontario, New York; and one from West Stockbridge to the boundary line of the state of New York.

Harvard University, at Cambridge, three miles west by north of Boston, is the most ancient and the most wealthy literary institution in the United States. It was founded in 1638, less than twenty years after the first settlement of New England. Its officers, in 1825, were a president, sixteen professors, a lecturer on chemistry, mineralogy, and geology, a librarian and an assistant, six tutors, an instructor in French and Spanish, and two proctors. The library is one of the largest in America, containing 26,000 volumes.* The philosophical and chemical apparatus are complete. There is a large and valuable cabinet of minerals belonging to the university, an excellent anatomical museum, and a botanic garden, containing eight acres of land, and furnished with an extensive collection of trees, shrubs, and plants, both native and foreign. A law school, a medical school, and a theological seminary, form part of the university. The whole number of students, in 1825, was 407, of whom thirty-five were engaged in the study of theology; 127 in that of medicine; ten in that of law; and 234 were undergraduates. The whole number educated here, from the establishment of the institution to the year 1818, was 4,442, a greater number than at any other college in the country. Williams College, in Williams-

* A catalogue of the library of Harvard University has recently been published by the overseers of that college, (in 3 vols. 8vo.,)

which presents the most extensive collection of works to be found in any institution in America.



THE UNIVERSITY OF CALIFORNIA, BERKELEY



town, in the north-west corner of the state, was incorporated in 1793. It has a president, three professors, three tutors, a library of about 1,500 volumes, a valuable philosophical and chemical apparatus, and about ninety students. The Theological Seminary at Andover, twenty miles north of Boston, was founded in 1808, and has been very richly endowed, entirely by private bounty. Within the first ten years after its establishment, it received to the value of 300,000 dollars, in donations from seven individuals. It has four professors, and more than 100 students. The library contains about 5,000 volumes. Phillips's Academy, also in Andover, is the best endowed and most flourishing academy in the state. This academy and the theological seminary, are under the same board of trustees. There are numerous other acad-

mies in the state, and common schools are universally established. In no part of the Union are literary institutions more liberally patronised by individuals, than in the eastern section of this state. At Amherst, in Hampshire county, is a college, which was incorporated in 1825. It has now a president, six professors, one tutor, and 152 students.

The Congregationalists have 491 churches, and 423 ordained ministers, 118 of whom are Unitarians; the Baptists, 129 churches, 110 ministers, and 12,580 communicants; the Methodists, 71 preachers, and 8,200 members; the Universalists, 46 societies; the Episcopalians, 31 ministers; the New Jerusalem Church, 8 societies; the Presbyterians, 9 ministers; the Roman Catholics, 4 churches; and the Shakers, 4 societies.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Males.	Females.	Coloured.	Total Population.	County Towns.	Population.	Distance. B.* | W.†	
Suffolk, E.	28,586	31,693	1,883	62,162	Boston	61,392		432
Essex, N. E.	39,431	42,929	527	82,887	{ Salem	13,886	14	446
					{ Newburyport	6,388	37	466
					{ Ipswich	2,951	27	452
					{ Cambridge	6,071	3	431
Middlesex, M.	38,107	39,348	513	77,968	{ Concord	2,017	17	427
Plymouth, E.	20,905	21,678	410	42,993	Plymouth	4,751	36	439
Norfolk, E.	20,436	21,296	169	41,901	Dedham	3,057	10	422
Bristol, S.	23,366	25,178	930	49,474	{ New Bedford	7,592	52	458
Barnstable, S. E.	13,997	14,363	165	28,525	{ Taunton	6,045	32	431
Nantucket, S. E.	3,339	3,584	279	7,202	Barnstable	3,975	68	466
Dukes, S. E.	1,702	1,768	48	3,518	Nantucket	7,202	100	531
Worcester, M.	41,545	42,449	371	84,365	Edgartown	1,509	97	495
Hampshire, W. M.	14,999	14,995	225	30,210	Worcester	4,172	39	394
Hampden, S. W.	15,288	16,003	349	31,640	Northampton	3,613	91	376
Franklin, N. W.	14,447	14,765	132	29,344	Springfield	6,784	87	363
Berkshire, W.	18,310	18,510	1,005	37,825	Greenfield	1,540	95	396
Lenox					Lenox	1,355	133	363
Total	294,449	308,559	7,006	610,014				

POPULATION OF MASSACHUSETTS, BOSTON, AND SALEM, AT DIFFERENT PERIODS

Massachusetts.		Boston.		Salem.	
In 1701,	70,000	In 1700,	7,000	In 1754,	3,462
1742,	164,000	1722,	10,567	1765,	4,427
1763,	241,024	1742,	16,382	1785,	6,923
1765,	227,926	1752,	17,574	1790,	7,921
1776,	348,094	1765,	15,520	1800,	9,457
1784,	357,510	1790,	18,038	1810,	12,613
1790,	378,787	1800,	24,937	1820,	12,731
1800,	422,845	1810,	33,250	1830,	13,886
1810,	472,040	1820,	43,298		
1820,	523,287	1825,	58,281		
1830,	610,014	1830,	61,392		

There are now no slaves in this state; their number was never considerable. For some years before the declaration of independence, public opinion was strongly against slavery. The first article in the Declaration of Rights contained in the general constitution, is, "All men are born free and equal;" and this was decided by the supreme court of Massachusetts, in 1783, to be an abolition of slavery.

Boston, the capital of the state, and the largest town in New England, is pleasantly situated at the bottom of Massachusetts Bay, on a peninsula of an irregular figure, two miles long, and in the widest part about one broad. The harbour is excellent. It has a sufficient depth of water for vessels of the largest size at all times of the tide, and is accessible at all seasons of the year. It is safe from every wind,

* From Boston.

† From Washington.

and is so capacious that it will allow 500 vessels to ride at anchor ; yet the mouth is so narrow as scarcely to admit two ships abreast. The entrance is defended by two forts. Boston is very extensively engaged in commerce. The amount of shipping owned here in 1815, was 143,420 tons ; a greater amount than belonged to any other port in the United States, except New York. The country in the immediate vicinity is fertile and populous, and connected with the capital by fine roads, while the Middlesex Canal opens a communication with the interior of New Hampshire. There are, probably, few cities in the world where there is so much wealth, in proportion to the population, as in this town ; and the inhabitants have long been celebrated for the liberality with which they support religious, literary, and humane institutions. The appearance of Boston is much admired by strangers, particularly when approaching from the sea. Its streets do not exhibit so great a regularity as those of some other cities ; but its beautiful situation and elegant public and private buildings, together with its richly ornamented promenades, render it altogether a delightful and attractive place. In the south-western part of the city, and in front of the state-house, is the celebrated Common, presenting an area of more than forty-four acres, containing the Mall, a very beautiful public walk, adorned with rows of trees. This is a delightful promenade during the summer months, and is a place of general resort. In the centre of the Common is an eminence still exhibiting marks of the fortification erected by the British during the revolution. North of it is the Crescent Pond, a beautiful sheet of water, surrounded with trees. Near the Mall, in Mason street, is the Medical College, an edifice belonging to Harvard University.

The Boston Athenæum is situated near the head of Pearl-street, and is a very spacious building, containing appropriate rooms. The number of volumes belonging to the institution is about 25,000, and is constantly increasing by purchase and by donation. It also contains nearly 14,000 medals and coins, some of which are very rare and interesting. The rooms are open from eight A. M. to nine P. M., and can be visited by strangers introduced by subscribers. The Gallery of Fine Arts is a handsome structure in the rear of the Athenæum, and is appropriated for scientific lectures, the Academy of Arts and Sciences, the Massachusetts Medical Library, a philosophical apparatus of the Mechanics Institution, and for paintings, which are exhibited in the upper story, and are generally very elegant. The Massachusetts Historical Society have an extensive library in a spacious apart-

ment over the arch in Franklin street. This society has published many volumes of Historical Collections, of indispensable importance to the American historian. The Boston Library Society have a collection of 6,000 volumes, and the Columbian Library contains about 4,500 volumes. There are numerous other libraries of less note. The New England Museum, in Court street, is probably the best in the United States, and should be visited by every stranger. Among the benevolent institutions, are the House of Industry at South Boston, 220 feet long, and forty-three wide ; the Massachusetts General Hospital, founded in 1818, which has been richly endowed, both by the state and by private individuals ; and an Hospital for the Insane, the buildings of which are at Charlestown.

The first houses built in the city were plain, and the streets narrow and crooked ; but a very few years have wrought a striking and almost incredible change. New streets have been laid out, old ones straightened and improved, and neat brick and granite dwellings have been substituted for ill-shapen and decaying houses of wood. The private buildings, and many of the stores recently erected, are more splendid than in any other city in the United States. In 1817, there was erected on each side of Market street, a line of brick stores more than 400 feet in length, and four stories high ; and on Central Wharf another immense pile of buildings was completed the same year, 1,240 feet long, containing fifty-four stores, four stories high, and having a spacious hall in the centre, over which is erected an elegant observatory. Other costly works have been constructed, which do honour to the town ; but the project which exceeded them all in boldness of design, in promise of public benefit, and in energy of execution, is that which within three or four years has been accomplished in the vicinity of Faneuil Hall Market. Extensive rows of granite stores, four stories high, constructed after the best model, are on either hand ; and between these two ranges of stores stands the new market-house, at the distance of 102 feet from those on the south side, and sixty-five feet from those on the north. The centre part of the building is seventy-four by fifty-five feet, having a hall in the second story. The wings are each 231 feet long by fifty wide, and two stories high. They have each a portico of four columns, twenty-three feet high ; the shafts are of granite, and in a single piece. The construction of the whole is of hammered granite of a uniform colour.

Among the public buildings are the State-house, which is built on elevated ground, commanding a fine view of the surrounding country, and containing an elegant statue of Washington, which cost 15,000







NEW YORK STATE CAPITOL

dollars; the new county Court-house, built at an expense of 92,000 dollars; the municipal Court-house; a new Jail; Fanueil Hall, where all public meetings of the citizens are held; two theatres, one of which (the Tremont) was erected in 1827, at a cost of about 120,000 dollars, being 135 feet in length, and about eighty in breadth,—the front of Hallowell and Quincy granite, in imitation of the Ionic order, with four pilasters supporting an entablature and pediment, and elevated on a basement seventeen feet high; the Custom House, Merchants' Hall, Boylston Market and Boylston Hall; United States Branch Bank; Concert, Julian, Corinthian, Pantheon, Washington, and Chauncey Halls.

There are six bridges connecting Boston with the adjacent towns. Charles River Bridge, which connects it with Charlestown on the north, 1,503 feet long; West Boston Bridge, connecting it with Cambridge Port on the west, 7,810 feet long; Craigie's or Canal Bridge, between these two, connecting it with Lechmere Point, 2,796 feet long; and two bridges uniting it to South Boston. The other avenue is a mill-dam, nearly two miles long and fifty feet wide, across the bay on the south-west side of the city; which not only furnishes a bridge, but puts in operation extensive tide-mills and other water-works.

There are nearly fifty churches in Boston, many of which have been built at a great expense, and are very elegant. On one of the quoins at the south west corner of Brattle-street church, of which Governor Hancock was a benefactor, his name had been inscribed; but it was effaced by the British soldiery during the revolution, and the stone has been permitted to remain as they left it. A shot from the Americans on the night previous to the evacuation of Boston by the British, still remains in the tower which it originally struck. In St. Paul's Church, in Common street, there is an elegant monument to the memory of General Warren, who was slain on Bunker's Hill, and whose remains are entombed in the cemetery beneath this church.

In the Chapel burial-ground, north of the stone chapel, there are several ancient monuments; and among them that of Governor Winthrop, who died in 1649. In the Cop's-hill ground similar monuments are found. In the Granary ground, the cenotaph erected to the memory of Dr. Franklin stands over his tomb, in which the remains of both his parents also repose.

The number of stage-coaches which regularly leave Boston, is much larger than at any other place in the Union. There are between eighty and ninety distinct lines of stages; which, according to their

established arrangements, not including extras, make about 125 departures, and as many arrivals, daily.

The country around Boston is much admired by every traveller of taste. The view from the dome of the State-house surpasses any thing of the kind in England, and is said not to be excelled by that from the castle-hill of Edinburgh, or that of the Bay of Naples from the castle of St. Elmo. Here may be seen at one view—the shipping; the harbour, variegated with islands and alive with business; Charles River and its beautiful country, ornamented with elegant private mansions; and more than twenty flourishing towns. The hills are finely cultivated, and rounded by the hand of Nature with singular felicity.

Charlestown is one mile north of Boston, and connected with it by a bridge over Charles River. Here are the state-prison, an hospital for the insane, and a United States navy yard. Lynn is on the coast, nine miles north-east of Boston. It is famous for the manufacture of ladies' shoes; no less than a million pair were made here in 1811. Marblehead is on a peninsula, sixteen miles north-east of Boston. It is more extensively engaged in the fisheries than any other town in the United States. In 1818, there were eighty vessels employed from this port in the cod fishery, manned by 760 men. The whole amount of shipping, in 1815, was 15,555 tons. Salem is on a peninsula, four miles north-west of Marblehead. It is the second town in New England for commerce, wealth, and population. The harbour has a good anchorage; but is so shallow, that vessels drawing more than twelve or fourteen feet of water must load and unload at a distance from the wharves. The East India trade is carried on from this port with great spirit: in 1818, there were employed in it, fifty-three vessels, carrying 14,272 tons. The whole amount of shipping belonging to this port in 1815, was 34,455 tons. Beverly lies about two miles north of Salem, and is largely concerned in the fisheries. Gloucester is on the peninsula of Cape Ann, sixteen miles north-east of Salem. It is one of the most considerable fishing-towns in the commonwealth. Newburyport, the third commercial town in the state, is on the Merrimack, three miles from its mouth, and thirty-three north-north-east of Boston. The harbour is deep, safe, and spacious, but difficult to enter. The amount of shipping, in 1815, was 25,691 tons. Plymouth is on the coast, thirty-six miles south-south-east of Boston. It is remarkable as the place where the first settlers of New England landed, on the 22d of December, 1620. The harbour is spacious, but shallow. The amount of shipping, in 1815, was 18,875 tons. New Bedford is fifty-two miles south of

Boston, on the estuary of a small river which flows into Buzzard's Bay. It has a safe and commodious harbour, and is extensively engaged in the whale fishery. The amount of shipping, in 1818, was 23,712 tons. The principal towns in the interior, are, Worcester, forty miles west of Boston; and Northampton and Springfield, on Connecticut River. There is an armoury belonging to the United States at Springfield, which employs 250 men, who complete on an average forty-five muskets daily: there are twenty-eight forges and ten trip-hammers connected with the establishment. In Berkshire county, the chief towns are Stockbridge and Lenox, on the Housatonic, and Pittsfield, twelve miles north of Stockbridge.

RHODE ISLAND

Is bounded by Massachusetts on the west and north-east, by the Atlantic on the south-east and south, and by Connecticut on the west.* Exclusive of water, the area is about 1,200 square miles, or 768,000 acres; length, fifty miles; and mean width, twenty-four miles.

Compared with its limited extent, Rhode Island is a very diversified state. The north-west part is hilly and broken, but becomes gradually level towards the Atlantic Ocean. The state is composed of three natural sections; four fifths of it constitute a generally hilly parallelogram, lying west from Narragansett Bay; the second section is composed of the truly delightful Islands of Narragansett Bay, Rhode Island, Prudence, and Conanicut, with a few still smaller; the third section is a small, irregular slip, lying along Massachusetts, and east from Narragansett. Narragansett Bay is at once the ornament and nursing-mother of Rhode Island. At its mouth opens the noble harbour of Newport, which, becoming narrower and shallower for about twenty-five miles inland, terminates, amidst highly attractive scenery, in the convenient, though shallow, harbour of Providence.

The climate of this state is as healthy as that of any part of America, and it is more temperate than that of any of the other New England states, particularly on the islands, where the breezes from the sea have the effect not only of mitigating the heat in summer, but of moderating the cold in winter. The summers are delightful, especially on the island of Rhode Island.

The soil is generally better adapted to grazing than tillage. A large proportion of the western and north-western part of the state has a thin and lean soil, but the islands and the country bordering on Narragansett Bay are of great fertility, and are celebrated for

their fine cattle, their numerous flocks of sheep, and the abundance and excellence of their butter and cheese. Cider is made for exportation. Corn, rye, barley, oats, and, in some places, wheat, are produced in sufficient quantities for home consumption; and the various kinds of grasses, fruits, culinary roots and plants, in great abundance and perfection. The rivers and bays swarm with a variety of excellent fish. Iron ore is found in large quantities in several parts, and some copper; there is, also, an abundance of limestone, particularly in the county of Providence.

In no state in the Union is so large a proportion of the population and capital employed in manufactures as in Rhode Island. The principal article is cotton goods, which are made in large quantities in Providence and its vicinity. There are now more than 100 cotton-mills in the state, many of them extensive establishments. The other manufactures are woollen goods, iron, ardent spirits, &c. The value of the manufactures, in 1810, was 4,106,074 dollars. The exports, in 1825, amounted to 678,467 dollars, of which 158,873 dollars were foreign produce. The amount of shipping, in 1823, was 39,000 tons. There are no fewer than forty-three banks in this state, of which the amount of stock paid in is 4,391,954 dollars.

Brown University, in Providence, derives its name from the liberal donation of Nicholas Brown, Esq., and is a flourishing and respectable literary institution. It was originally established at Warren, in 1764, and was removed to Providence in 1770. It has a president, eight professors, and two tutors, and contains about 120 students. The library contains more than 5,700 volumes, and the philosophical apparatus is extensive. There are two college edifices of brick: University Hall, 150 feet by forty-six, and four stories high, containing forty-eight rooms for students, and eight large rooms for public uses; and Hope College, (the munificent gift of N. Brown, Esq.,) nearly of the same dimensions, with the same number of rooms for students. Its site is elevated, and it commands a fine prospect. The president and a majority of the trustees are required to be of the Baptist denomination. Common schools are not supported by law in Rhode Island, as in the other New England states, except in Providence and Newport; academies, however, are established in all the principal towns, and private schools are maintained during the winter months in every town, and nearly in every town throughout the year.

The Baptists in this state have 16 churches, 12 ministers, and 2,600 communicants; the Methodists, 10 preachers, and 1,100 members; the Congregationalists,

* Longitude, 71° 6' to 71° 38'; latitude, 41° 22' to 42° 3'.



10 churches, 10 ministers, and 1,000 communicants; the Unitarians, 2 societies, and 2 ministers; the Sabbatharians, about 1,000 communicants; the Six-principle Baptists, about 8 churches, and about 800 com-

municants; the Friends are numerous; and there are some Universalists, and 1 Roman Catholic church. There are at this present time (August, 1834) 14 Episcopal churches in the state.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Population, 1830.	Distance. P.* | W.†	
Providence, N.	35,786	47,014	PROVIDENCE	16,832		394
Newport, S. E.	15,771	16,534	Newport	8,010	30	403
Washington, S. W.	15,687	15,414	South Kingston	3,663	31	389
Kent, M.	10,228	12,784	East Greenwich	1,591	15	406
Bristol, E.	5,637	5,466	Bristol	3,054	15	409
Total	83,059	97,212				

POPULATION AT DIFFERENT PERIODS.

Population. In 1701, 10,000	Population. In 1790, 68,825	Increase.	Slaves.
1730, 17,935	1800, 69,122	From 1790 to 1800, 297	948
1748, 34,128	1810, 76,931	1800 1810, 7,809	380
1755, 46,636	1820, 83,059	1810 1820, 6,128	108
1774, 59,678	1830, 97,212	1820 1830, 14,153	48
1783, 51,809			14

Providence, the largest town in the state, and the third in New England in point of population, stands on Providence River, just above the mouth of the Seekhouk, thirty-five miles from the ocean. The town is built on both sides of the river, and the two parts are connected by a handsome bridge. Providence is a wealthy and flourishing town. The principal source of its prosperity is the cotton manufacture, which was introduced about fifteen years ago, and has increased with astonishing rapidity. The commerce of the town has grown with its manufactures: the amount of shipping, in 1826, was 21,000 tons, of which about 4,000 are employed in the East India trade, and 10,000 in the coasting trade with the southern states. About ten vessels are constantly employed in the exportation of cotton goods. Packets ply regularly between Providence and Newport, Bristol, &c., and the southern ports. The population is estimated at about 16,000 persons. Pawtucket village, finely situated on Pawtucket River, at the falls, four miles north-east of Providence, is one of the most flourishing manufacturing villages in the United States. Bristol is on the east side of Narragansett Bay, fifteen miles south-south-east of Providence. It has a safe and commodious harbour, and is a place of considerable trade. Warren is a pleasant town, adjoining Bristol, on the north. Newport is near the south-west extremity of the island of Rhode Island, thirty miles south of Providence. Its harbour is one of the finest in the world, being safe and easy of access, sufficiently capacious to contain whole fleets,

and deep enough for vessels of the largest burden. It is defended by Fort Wolcott, erected on Goat Island, and two other forts, called Fort Adams and Fort Green. The site of the town is a beautiful declivity, which rises gradually from the harbour, presenting a fine view on the approach from the water. The beauty of its situation, and the salubrity of its climate, have made it a place of fashionable resort from the southern and middle states, during the summer months. Newport was formerly more flourishing than it is at present: previously to the American revolution, it was the fourth commercial town in the British colonies, and contained, at one period, more than 9,000 inhabitants. During the revolutionary contest, it was for a long time occupied by the English, and suffered severely. At present it maintains some trade with the East Indies, Europe, and Cuba; but the most important branch of its commerce is the coasting trade with the middle and southern states. In 1819, the amount of shipping owned here was 10,951 tons. The fisheries are very valuable; there is, probably, no fish-market in the world which affords a greater variety.

CONNECTICUT.

The boundaries of this state are,—on the north, Massachusetts; on the east, Rhode Island: on the south, Long Island Sound; and on the west, New York.† The length from east to west, is eighty-five miles; mean width, sixty miles; and area, 5,050 square miles.

* From Providence.

† From Washington.

‡ Longitude, 71° 20' to 73° 15'; latitude, 41° to 42° 2'.

Though generally hilly, and in part mountainous, no part of Connecticut rises to a great elevation above the level of the ocean. The greatest elevation is a range of small mountains on the west side of Connecticut River, being a continuation of the Green Mountains. The hills are generally of moderate size, and occur in quick succession, presenting to the traveller an ever-varying prospect.

Though exposed to the extremes of heat and cold, and to sudden changes of temperature, the country is very healthful. The north-west winds which prevail during the winter are keen; but the serenity of the sky during the same season makes amends, in some degree, for the severity of the weather. In the maritime towns the weather is particularly variable, changing as the wind blows from sea or land: in the inland country it is less so.

The soil is generally fertile, though intermixed with portions that are comparatively thin and barren; and the whole is well-watered. It is generally in a state of good cultivation, resembling, in many parts, a well-cultivated garden. The principal productions are Indian corn, rye, wheat in many parts, oats, barley, buckwheat, flax in large quantities, some hemp, potatoes, pumpkins, turnips, peas, beans, &c. Orchards are very numerous, and cider is made for exportation. The state is, however, on the whole, better adapted to grazing than tillage; and its fine meadows and pastures enable the farmers to feed great numbers of cattle, horses, and sheep. The quantity of butter and cheese made annually is great, and of well-known excellence. Beef and pork of superior quality are also abundant. The state is for the most part laid out in small farms, of from fifty to 300 and 400 acres. It is intersected by numerous roads, which are generally kept in good repair. Its exports consist of beef, pork, cattle, horses, mules, butter, cheese, maize, rye, flax-seed, fish, candles, and soap. Almost all the produce of the western part of the state is carried to New York.

The manufacturing industry of Connecticut is greater in proportion to the population, than that of any other state in the Union except Rhode Island. The manufactures consist of cotton, and woollen goods, tin ware, iron, gin, glass, paper, snuff, powder, leather, shoes, clocks, buttons, fire-arms, carriages, &c. Mines of different kinds have been opened in this state; but they have not been wrought to any considerable extent, with the exception of those of iron ore, which abounds in Salisbury and Kent, of an excellent quality, and is also found in other places. There is a lead mine on the Connecticut, two miles from Middletown, which was wrought during the

revolutionary war. Copper mines have been discovered and opened in several places, but, having proved unprofitable, they have been neglected. Marble is found in Washington, Milford, Brookfield, and New Milford; porcelain clay in New Milford and Cornwall; black lead in New Milford and Marlborough; cobalt in Chatham; and excellent freestone in Chatham, Haddam, and East Hartford. There are several mineral springs, but none of much note, except those of Stafford and Suffield; the one at Stafford, is the most celebrated in New England.

Yale College, in New Haven, is one of the oldest and most respectable colleges in the United States. It was founded in 1701: its officers, in 1825, were a president, six professors, and eight tutors, besides four medical professors. The college library contains about 7,000 volumes; and the students have libraries amounting to 2,000 more. The philosophical and chemical apparatus are complete, and the mineralogical cabinet is probably superior to any other in the United States. The medical institution, connected with the college, has an anatomical museum and medical library. The whole number of students, in 1825, was 468; of whom, seventy-five were medical students, twenty-three theological, and sixteen law, and 354 were under-graduates. The American Asylum, for the education of the Deaf and Dumb, established at Hartford in 1817, was the first institution of the kind, in America. The number of pupils, in 1819, was fifty. The Trumbull's Gallery, recently established, is a rich collection of paintings, chiefly illustrative of events memorable in the American revolution, and by the pencil of the distinguished artist whose name it bears. The congress of the United States has made a generous grant to the asylum, of 23,000 acres of land; and the legislatures of several of the states have made appropriations for the support of pupils. A Foreign Mission School was established at Cornwall, in 1817, by the American board of commissioners for foreign missions, for the purpose of educating heathen youth from various parts of the world. After receiving their education they are sent home to instruct their countrymen. In 1820, there were twenty-nine pupils, of whom nineteen were American Indians, and six had come from the islands of the Pacific Ocean. Several natives of the Sandwich Islands, who were educated at this school, have already returned to their native country, well qualified for usefulness. A Law School was established at Litchfield in 1784, which has had great reputation. It has usually about thirty students, and the whole number that have been educated here is more than 600. Bacon Academy, in Colchester

was founded in 1801; it is well endowed and very flourishing. The Episcopal Academy, in Cheshire, is a flourishing institution. Washington College, at Hartford, was incorporated in 1823. There are, also, academies at Plainfield, Litchfield, and almost all the principal towns in the state. Common schools are universally established in Connecticut. The state has a large school fund, which amounted, in 1824, to 1,756,233 dollars. The yearly income, together with 12,000 dollars from the public taxes, is annually devoted to the maintenance of common schoolmasters, in every town in the state. The whole amount paid to the towns from this fund, in 1825, was 72,229 dollars,

and the amount of the state tax, in 1817, was only 48,362 dollars; the income of the fund exceeding the amount of the tax by 22,551 dollars. This, probably, is the only government in the world which gives to the people more than they pay to the treasury.

The Congregationalists have 236 ministers and 36 licentiates; the Baptists 99 churches, 78 ministers, 14 licentiates, and 9,732 communicants; the Episcopalians, 59 ministers; the Methodists, 40 ministers and 7,000 communicants; there are, also, several societies of Friends, several of Universalists, 2 of Unitarians, 1 of Catholics, 1 of Shakers, some Free-will Baptists, and a few Sandemanians.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Population.	Distance.	
					H.*	W.†
Fairfield, s. w.	42,739	46,950	{ Fairfield	4,226	55	289
Hartford, n. m.	47,264	51,141	{ Danbury	4,311	61	290
Litchfield, n. w.	41,267	42,855	HARTFORD	7,076		335
Middlesex, s. m.	22,405	24,845	Litchfield	4,456	31	324
New Haven, s. m.	39,616	43,848	{ Middletown	6,892	14	355
New London, s. e.	35,943	42,295	{ Haddam	3,025	25	335
Tolland, n. m.	14,330	18,700	NEW HAVEN	10,180	34	301
Windham, n. e.	25,331	27,077	{ New London	4,356	42	354
Total	275,248	297,711	{ Norwich	3,144	38	362
			Tolland	1,698	17	352
			Brooklyn	1,413	41	372

POPULATION AT DIFFERENT PERIODS.

Population.		Population.		Increase.		Slaves.
In 1701,	30,000	In 1790,	237,946	From 1790 to 1800,	13,056	2,764
1749,	100,000	1800,	251,002	1800	1810,	10,940
1756,	130,611	1810,	261,942	1810	1820,	13,306
1774,	197,856	1820,	275,248	1820	1830,	22,463
1782,	209,150	1830,	297,711			97

There are five incorporated cities in Connecticut, viz. Hartford, New Haven, Middletown, New London, and Norwich. Hartford and New Haven are the capitals of the state, the sessions of the legislature being held at them alternately. Hartford lies on the west bank of the Connecticut River, fifty miles from its mouth. It is advantageously situated for trade, being at the head of the sloop navigation, and having an extensive, rich, and industrious back country. New Haven lies round the head of a bay, which stretches inwards about four miles from Long Island Sound. The city is regularly laid out on a large plain, which is bounded on the north-east and north-west by mountains. The harbour is well defended from winds, but shallow, and is gradually filling up with mud,—which difficulty has been remedied in part, by the construction of a wharf, about a mile in length, extending into the harbour. Middletown is on the west bank of Connecticut River, thirty-one

miles from its mouth, fifteen miles south of Hartford, and twenty-six north-east of New Haven. It is a pleasant and flourishing town, and has considerable commerce. The amount of shipping in 1815, was 19,499 tons, a greater amount than belonged to any other port in the state. The river is navigable to this place for vessels drawing ten feet of water. New London is near the south-east corner of the state, on the west bank of the Thames, three miles from its entrance into the sound. It is one of the most considerable commercial towns in the state. The harbour is large, safe, and commodious, and has five fathoms water. It is defended by two forts. Norwich is on the Thames, fourteen miles north of New London, and forty south-east of Hartford. It is favourably situated for trade, being at the head of navigation on the river, and having a productive back country. There are falls within the town, which afford seats for various mills and manufacturing establishments.

* From Hartford.

† From Washington.

Litchfield is thirty miles west of Hartford, and thirty-six north-north-west of New Haven. Its situation is elevated and healthy. Wethersfield is on the west bank of Connecticut River, between Hartford and Middletown. It is famous for raising great quantities of onions. Saybrook, one of the oldest towns in the country, stands on the west bank of the Connecticut River, at its mouth. Stafford, famous for its mineral spring, is twenty-seven miles north-east of Hartford. Cornwall, the seat of the Foreign Mission School, is ten miles north-west of Litchfield. Fairfield, the chief town in Fairfield county, is twenty-two miles west-south-west of New Haven. Bridgeport, an incorporated borough, and a thriving commercial place, is four miles north-east of Fairfield.

The history of this state was written by the Rev. Dr. Trumbull.

CHAPTER II.

NEW YORK—NEW JERSEY—PENNSYLVANIA.

NEW YORK.

THIS extensive, populous, and flourishing state, extends from latitude $40^{\circ} 30'$ to 45° ; and longitude 73° to $79^{\circ} 55'$. Length from Staten Island, the south-west point, 315 miles, and from the south-west angle of Massachusetts along the line of north latitude 42° , 320 miles. The area is within a fraction of 46,500 square miles, and the mean breadth nearly 110 miles. It is bounded on the north by Lower Canada, on the east by Vermont, Massachusetts, and Connecticut, on the south-east by the Atlantic Ocean, on the south by New Jersey and Pennsylvania, on the west by Pennsylvania, Lake Erie, and the Niagara River, and on the north-west by Lake Ontario and the River St. Lawrence.

The south-eastern angle of the state, about forty miles above New York, is mountainous, being traversed by several ridges from New Jersey, one of which crosses the Hudson at the Highlands. The Catskill mountains, in the counties of Ulster, Greene, Albany, and Schoharie, are the highest in the state; Round Top, the principal summit, being 3,804 feet above the level of the sea. The country on Lake Champlain

is hilly, and becomes mountainous as you approach the highlands which divide the waters of this lake from those which fall into the St. Lawrence. West of these highlands, a fine country, at first hilly, then level and fertile, extends to the St. Lawrence and Lake Ontario. The western part, lying between Lake Ontario and Pennsylvania, is principally level, except near the Pennsylvania boundary, where it becomes hilly and mountainous. From Genesee river, near its mouth, to Lewistown, on the Niagara River, there is a remarkable ridge, running almost the whole distance, which is seventy-eight miles, and in a direction from east to west. Its general altitude above the neighbouring land is thirty feet, and its width, in some places, is not more than forty yards. Its elevation is about 160 feet above the level of Lake Ontario, to which it descends by a gradual slope, and its distance from that water is between six and ten miles. There is every reason to believe that this ridge was once the margin of Lake Ontario. About twenty miles south of this ridge, and parallel with it, there is another which runs from Genesee River to Black Rock. The country between the ridges is called the Tonnewanta Valley, and there is some reason to believe that it was once covered by the waters of Lake Erie.

The falls of Niagara are, perhaps, the most wonderful natural object in the world.* They are in Niagara River, about half way between Lake Erie and Lake Ontario. This immense river here rushes over a precipice, and falls perpendicularly to the depth of 176 feet. The roar of the waters can sometimes be heard at the distance of forty miles; and the vapour, which continually rises in clouds from below, can be seen at the distance of seventy miles.—In Mohawk River, about two miles from its mouth, are the falls called the Cahoos, or Cahoes, which have been much admired for their beauty and sublimity. The river, which is here between 300 and 400 yards broad, descends, at high water, in one sheet, to the depth of seventy feet. About three quarters of a mile below, a bridge has been thrown across the Mohawk, from which the view of the falls is inexpressibly grand. The Saratoga and Ballston springs are the most celebrated in America. Saratoga is thirty miles north of Albany, and a few miles west of the Hudson. Ballston is twelve miles south-west of Saratoga. These springs, during the summer months, are the resort of the gay and fashionable, as well as

* It was our intention to have given a lengthened description of this grand and magnificent scene from a manuscript with which we have been presented by a recent traveller, but matter of a more important, though not more interesting character, has left so little

room within the limits of our work, that the description of the beautiful scenery of the lakes, the Hudson, &c., which would require a volume to do it justice, must be omitted.



VIEW OF THE CANAL.



of invalids, from all parts of the United States. The waters afford relief in many obstinate diseases. The warm springs of New Lebanon, twenty-nine miles south-east of Albany, are visited for bathing. Besides these springs may be mentioned the Avon mineral springs, in Livingston county. They have but very lately attracted attention. They are of a sulphureous character, and highly valuable in many diseases of a chronic nature, affections of the skin, &c. Their medicinal qualities have been noticed in a former part of this work, from a medical report by Professor Francis.

The eastern half of Long Island is sandy and barren; the western part is fertile, and in a state of high cultivation. The country on the Hudson, below the mouth of the Mohawk, has a good medium soil. The counties of Westchester and Dutchess are under very good cultivation. The alluvial flats of Columbia and Rensselaer counties are very extensive and rich. A considerable district west of Albany consists of sandy plains, interspersed with marshes. The alluvial flats on the Mohawk are extensive and very fertile. The soil of the elevated plain of the western region, occupied by the small lakes, is a rich mould, equally well adapted to grain and grass. The alluvial flats are here extensive; those on the Genesee river include about 60,000 acres. Wheat is raised in this state in greater quantities than all other grain. Indian corn, rye, oats, flax, hemp, &c., are also extensively cultivated.

As New York stretches from north to south four degrees and a half, passing by the states of Vermont, Massachusetts, and Connecticut, the climate of the eastern parts resembles that of these states respectively. In the south-east, towards the sea, the climate is temperate, but subject to very sudden and great changes. After passing the highlands, and going into the western country beyond Utica, the climate becomes milder than it is to the eastward. In the western part, contiguous to Lakes Ontario and Erie, the temperature is moderated by these waters, and does not go to the same extremes as in the south-east. The climate of the whole state is in general healthy, and favourable to cultivation. At Salina, in Onondaga county, about thirty miles from Utica, are the celebrated salt springs and salt works, which yield about 500,000 bushels of salt annually, and the manufacture may be extended to any quantity.

The turnpike roads are numerous: the most important is the great western turnpike, leading from Albany to Canandaigua, a distance of 196 miles. The great canal connecting Lake Erie with the Hudson was completed in 1825, and is 360 miles long. The

route is as follows: beginning at Albany on the Hudson, it passes up the west bank of that river, nearly to the mouth of the Mohawk; then generally along the south bank of the Mohawk, through the counties of Albany, Schenectady, Montgomery, Herkimer, and Oneida, to Rome. From Rome it proceeds in a south-west direction, and crosses Oneida creek into Madison county, where it turns to the west, and passes through Onondaga county, approaching within a mile and a half of Salina, at the south end of Onondaga or Salt Lake. It crosses Seneca River at Montezuma, and, passing by Lyons and Palmyra, strikes the Genesee River at Rochester. West of the Genesee River, it runs on the south side of the Ridge Road, and parallel with it for sixty miles, and then, turning to the south, joins Tonnewanta Creek, eleven miles from its mouth in Niagara River. The channel of the Tonnewanta is made use of for these eleven miles, and the canal then proceeds in a southerly direction from the mouth of the Tonnewanta along the east bank of Niagara River, to Buffalo, on Lake Erie. This route is divided into three sections: the western section extends from Buffalo to Montezuma, on Seneca River, 155 miles; through this distance the level of the canal uniformly descends from the lake, and the whole descent is 194 feet, by twenty-one locks. The middle section extends from Montezuma to Utica, ninety-six miles; through this distance the level of the canal uniformly ascends, and the whole ascent is forty-nine feet, by nine locks. The eastern section extends from Utica to Albany, 109 miles; through this distance the level of the canal uniformly descends, and the whole descent is 419 feet, by fifty-one locks. The aggregate of rise and fall is, therefore, 662 feet, and the difference of levels between Lake Erie and the Hudson, 564 feet. The canal is forty feet wide on the surface, twenty-eight at the bottom, and four feet deep. It was estimated by the commissioners in 1817, that the whole expense would be 4,881,733 dollars. The canal was commenced on the 4th of July, 1817, and on the 4th of November, 1825, the first boat from Lake Erie arrived at New York. For sixty-seven miles of the middle section, the canal proceeds on the summit level without a single lock. The northern canal extends from Lake Champlain to its junction with the western canal, about eight miles north of Albany, and its whole extent is about sixty-four miles, estimating forty-eight miles and a half for artificial navigation, and fifteen miles and a half for natural navigation improved. The actual cost of the Erie and Champlain canals was 9,123,000 dollars. The debt contracted for them is 7,771,000 dollars. The tolls in 1833, amounted to 1,422,695 dollars.

Besides these, there are several other canals: Oswego Canal, completed; length, thirty-eight miles, from Salina to Oswego, connecting the Hudson and Erie Canal with Lake Ontario. Seneca Canal, completed; its length twenty miles, connecting the Seneca and Cayuga Lakes with the Hudson and Erie Canal.

Chemung Canal, from the head waters of Seneca Lake to the Chemung or Tioga River, at the village of Elmira, Tioga county. Crooked Lake Canal, connecting the waters of Crooked and Seneca Lakes, 22 1-2 miles, through a beautiful and fertile country. Delaware and Hudson Canal; length, sixty-five miles, from Delaware, in Orange county, to the Hudson, near Kingston.

The stupendous enterprise of the state of New York, in the successful projection of her canal policy, demands that something more than the present notice of the English editor should find a place in this reprint. Many eminent individuals, at different times, seem to have conceived some idea of the practicability of forming additional communications by water with the lakes and the Hudson river: but it was reserved as a becoming object of the late De Witt Clinton, amidst doubts, uncertainties, and opposition, to persevere in the magnificent measure of effecting a canal navigation from the Hudson to lake Erie. "In this great work of internal improvement, (to borrow the language of Charles King, Esq. in an obituary notice of this illustrious patriot,) Clinton persevered through good report and through evil report, with a steadiness of purpose that no obstacle could divert; and when all the elements were in commotion around him, and even his chosen associates were appalled, HE ALONE, LIKE COLUMBUS, on the wide waste of waters, in his frail bark, with a disheartened and unbelieving crew, remained firm, self-poised, and unshaken." "Is it extravagant or unjust to say, that, like Columbus, he was recompensed by opening new worlds to our intercourse,—vast regions, which the canals of New York must be the means of subduing, civilizing, enriching."

A history of the canal policy of the state has been drawn up with great minuteness and fidelity by a fellow labourer in the great cause—the late Cadwallader D. Colden. From that memoir, the following copious extracts are made. A knowledge of the subject is of too great importance not to receive the additional circulation which this work may give it. Professor Hosack's memoir of De Witt Clinton may also be consulted with peculiar advantage on the subject of the respective merits of different claimants on the canal policy of New York.

Memoir prepared at the request of a Committee of the Common Council of the city of New York and presented to the Mayor of the city, at the celebration of the completion of the New York canals. By Cadwallader D. Colden.

The oceans and the Mediterranean seas of our continent are united. Canals, extending more than four hundred miles, have been completed in little more than eight years, by the energies and resources of a single state, within the territories of which no white man had set his foot at the beginning of the seventeenth century.

Vessels, waterborne from the shores of Lake Erie, over the intervening hills and valleys, will meet ships from the Atlantic, at a point which, two hundred years ago, was surrounded by a wilderness, filled with savage tribes, hostile to each other.

They, like other human beings in the same uncivilized state, seemed to consider war as their natural condition, and had a proneness to treat every stranger as an enemy. Their ignorance and superstition led them to believe every thing supernatural, which was extraordinary. When they discovered the first European vessel approaching the land, apparently growing out of the ocean, and finally saw that there were human forms about it, they thought it their great Manitto, with attending spirits, moving on their waters.

The meeting of the boats from the Lakes, and of vessels from the sea, will be near the spot, where he who discovered, and gives name to our magnificent river, landed in the year sixteen hundred and nine.

The first ground within the territory of this state, which Hudson touched, it is believed, was Coney Island.

How different is the scene now presented, and that which he beheld!

We shall have around us the same great objects of nature: The seas—the beautiful bays—and our magnificent mountain river: But instead of the huts of savages, we shall have the abodes of a civilized, opulent, and a free people:—Instead of uncultivated wilds, we shall be surrounded by a country yielding all that is necessary to the comfort of man:—Instead of savages in their canoes, yelling with amazement, as when they first saw the vessel of Hudson, there will be magnificent barques, gorgeously decorated, bearing thousands of our fellow citizens, exulting in the accomplishment of a work, which is an evidence, how immeasurably civilized, transcends savage man.

To celebrate an event in which the citizens of this state may justly feel so much pride, and which is so

Deeply connected with their interests, is to indulge very natural feelings—But it is a higher sentiment, Mr. Mayor, which has induced the honourable body over which you preside, to engage in the proposed celebration with so much zeal and liberality, and which will induce many thousands of our fellow citizens to unite with them on the occasion. The great work of improving or creating inland navigation in the United States has but commenced. In our own state there are a hundred paths over which navigable waters are yet to be led; and within our national territory, the field for such improvements is boundless and almost uncultivated. We shall rejoice in the completion of our canals, not only for our own sakes, but with the hope that the acclamations of our celebration will be heard by all who need encouragement to follow our example.

Nor do I think that we should be unwilling to confess, that upon this occasion we are desirous to attract the attention of foreign nations.—They have told us that our government was unstable—That it was too weak to unite so large a territory—That our republic was incapable of works of great magnitude—That these could only be performed where corporal labour might be commanded and enforced, not where it must be voluntary. But we say to them, see this great link in the chain of our union—in the great bond which is to bind us together irrefragably and for ever.—It has been devised, planned, and executed, by the free citizens of this Republican State. A work merely of pride and ostentation, it is true, could not be executed here. It would be as impossible to build the pyramids of Egypt on our soil, as it would be to float them to our shores; but works that are useful, and connected with the public good, will only have opponents, as we have seen in the progress of this great enterprise, so long as there are doubts and fears as to its character and practicability; but let these be determined, and the suggestions of patriotism will be better stimulants than the sceptres of despots.

Before I proceed in the course which I propose to pursue on this occasion, and which I will indicate, when I shall have the honour to put into your hands this Memoir, permit me to add a few words, in addition to what I have already said, in relation to the state of our country previously to, and at the time the canals were commenced.

It is, comparatively, but a short time since, all here was wild and savage. It is possible that the fourth generation from the discovery of New York, is not yet extinct;—It is possible that the great-grand-child of a man who saw Henry Hudson is yet living.

But short as the time is since there was any set-

tlement of civilized man, on this part of the continent, even in that short time, the progress of civilization has been continually disturbed and retarded.

The Dutch claimed, and took possession of this part of the country, in virtue of its having been discovered by Hudson, while he was in their employ.

The settlements made by the Netherlanders were very insignificant; but new and feeble as they were, they were harassed by continual disputes, and sometimes wars; not so much with the savages, as with their civilized neighbours.

The colony was involved in the contests between its mother country and the English, which terminated in sixteen hundred and seventy-four, when the New Netherlands were finally ceded to Great Britain.

From this time to the commencement of the Revolution, the Province of New York was involved in the wars in which England was almost uninterruptedly engaged, or its peace and prosperity was disturbed by intestine commotions.

The struggles between the French and English, for advantages in the fur trade, kept the colonies continually embroiled with the savages. In the year sixteen hundred and ninety, these remorseless beings sacked and burnt Schenectady, and murdered most of the inhabitants.

At the commencement of the revolution, the population of the territory which now forms the state of New York, amounted to no more than one hundred and eighty thousand.

Notwithstanding the revolutionary war of eight years, the number of inhabitants increased, and at the peace in seventeen hundred and eighty-three, amounted to about two hundred thousand, not much exceeding the present population of the city. Yet in the year seventeen hundred and eighty-eight, when a treaty with the Indians was held at Fort Stanwix, the now beautiful, populous, and cultivated country through which the western canal runs thither, from the shores of Lake Erie, contained not a single white inhabitant.

The nature of the government, previously to our independence, was very unfavourable to the progress of improvements. No great work has been accomplished by colonists, at least in modern times. Perhaps the rule of Great Britain was as little oppressive to those she called her children, as that of any other parent state, yet the colonial restraints and impositions then thought justifiable, were such, that the wonder is not that we shook off our chains so soon, but that we endured them so long. It was not the mere right to tax her colonies without their consent, which Great Britain claimed, that led to their revolt.

The restrictions she imposed for the sake of her commerce were insupportable. The colonies were not allowed to manufacture the produce of their own soil. They were obliged to send raw materials to England, that they might be returned by her manufacturers, charged with whatever they pleased to exact for profit. We can hardly believe at this day, that when we were under the dominion of our mother country, the noise of trip hammers and rolling mills, which are now every where heard in our mountains, would have been considered as treasonable sounds.

The vast and fertile regions of the west, with which we have opened communication by our canals, were doomed to be a perpetual wilderness. The crown, and colonial governors, refused to make grants at any distance from the sea-board, lest they should become inhabited by a people who would feel but little respect for laws so much at enmity with their interest, and who would be out of the reach of coercion.

Ireland, though not a colony, is treated as a dependency of England. Her population, in proportion to her territory, is greater, and her natural advantages are at least equal, to those of the Island of Britain. Yet Ireland has only two or three canals, of no great extent, while England has upwards of one hundred; extending more than twenty-four hundred miles.

Florida was for a long time a colony of a European nation, which owned the mines of Chili, Mexico, and Peru. Had this province continued subject to Spain, there is little reason to believe, that any part of the treasures transmitted from the new to the old world, or the resources which the genial climate and fruitful soil of this beautiful country might have afforded, would have been applied to opening a canal through the Florida Peninsula. Within four years from the cession of this territory to the United States, a project for a canal through it, from the Atlantic, to the Gulf of Mexico, is on foot, and on the point of execution.

Spain had also under its government the Isthmus which separates the Atlantic and the Pacific. Jealous of her colonies, she did not encourage any attempt to form a communication between the oceans.

The spirit of liberty has spread its influence to every part of this continent. Independent governments are hardly established to the south, before it is proposed to unite the two great seas.

Do we not see in these expansions of the minds of men the moment they are set free, how far despotic governments confine the human faculties, and limit the happiness of a people? To use and enjoy the

reason and power with which man is endowed by his Creator, he must have liberty and independence.

There is as much difference between man, the subject of a despotic government, and the citizens of a free representative republic, as there is between waters diverted to some artificial channel, and the deep current of Niagara, pouring through its natural course, irresistible, but by the hand of the Almighty.

Let us suppose these objects accomplished.—Let us suppose the two great oceans united through the Isthmus of Darien—the Atlantic and the Gulf of Mexico through the Peninsula of Florida. Let us suppose the waters of the Lakes united with the Mississippi, as those of the Lakes are now with the Hudson. These will be the works of republican governments. When they are completed, which probably will be within a few years, we shall not fear to compare them with any thing that has been done in the old world, for the happiness of mankind. We may see in many countries works of the same nature, but their benefits are limited to the narrow spaces which they occupy, or at most, to the territory in which they exist; but the canals we have accomplished, and those on the point of being executed, will affect the whole world. They will make an important change in the arrangement of the lands and waters of the earth, the effects of which will be felt by the whole human species. We know how much wealth is accumulated in Europe. We see “the gorgeous palaces, the cloud cap’t towers,” which are the pride and boast of its inhabitants. We turn to the history of the ages of the existence of its governments; we read of their wars—of the many fields covered with their slain, and of their contests which have dyed the ocean with human blood, but we do not admit that these have given to those who have so long contemned our republican institutions, claims as the benefactors of mankind. But we acknowledge that the scientific institutions of the Europeans, the progress they have made in the arts and sciences, their cultivation of the human mind, deserve admiration. We do not forget that our fathers were from the other side of the great waters, and brought with them that spirit of liberty which has been transmitted through many generations, and has animated the Washingtons and Bolivars of the North and of the South. The historians, poets, men of learning and science, in the old world, are not more admired and revered on the soil which gave them birth, than they are in these distant regions. Whenever we estimate our political freedom and happiness, we remember how much of it we owe to the lessons we have learnt from our transatlantic ancestors; nor shall we ever refuse to

admit, that the great works of art, the completion of which we are about to celebrate, and which seem so much in advance of our age as a nation, could not have been accomplished without the science and examples we derived from abroad.

We date our independence from seventeen hundred and seventy-six. But our existence as a nation must be calculated from the conclusion of the revolutionary war in seventeen hundred and eighty-three. From that time the water communications between the Hudson and the Lakes Champlain and Ontario, seem to have attracted the attention of our citizens, with a view to open and improve them; though long previously the streams of the north and west and of the south, and the facility with which they might be united, had been noticed.

Quebec was founded by the French, the year before the North River was discovered by Hudson. When afterwards the English became possessed of the trading establishments at Albany and Schenectady, the Wood Creek of Lake Champlain, and the Wood Creek of the Oneida Lake, were the routes by which, in peace, there was intercourse between the establishments on the Lakes and the Saint Lawrence, and those on the Hudson River. In times of hostility these water courses, and the intervening portages, were traversed by the armaments of the hostile colonies, and were the war paths of their savage allies. Consequently, though the country between the Lakes, and the Saint Lawrence and the Hudson, was all wilderness, its topographical features were perfectly well known.

In seventeen hundred and twenty-four, the then surveyor general of the province of New York, made a report to the colonial governor, in which he describes the water courses and carrying places between Albany and Montreal, by way of Lake Champlain, and between Albany and the Cataraqui Lake, which is now called Ontario, by the Mohawk River, and the river which runs into the Oneida Lake, with as much accuracy as they could be described at this moment. The carrying place between the Mohawk, and the stream which we now call Wood Creek, he describes as "a portage only three miles long; except," says he, "in very dry weather, when the goods must be carried two miles further." He then describes the passage down the Onondaga River, to the Cataraqui Lake, and shows that goods might be carried from Albany to that Lake by the Mohawk, Oneida, and the Onondaga River, cheaper, and much more conveniently, than as they were then transported, to the mouth of the Oswego River by way of the Hudson, Lake Champlain, Montreal, and the river Saint Lawrence.

At the moment I am writing, I hear the cannon which, at the termination of a line of five hundred and thirteen miles, repeats the signal, that the first boat from Lake Erie has entered the Western Canal, on her way to this city. Who that has American blood in his veins can hear this sound without emotion? Who that has the privilege to do it, can refrain from exclaiming, I, too, am an American citizen; and feel as much pride in being able to make the declaration, as ever an inhabitant of the eternal city felt, in proclaiming that he was a Roman.

This abrupt digression may be incompatible with the sober character a written memoir ought to preserve; but the excitement which so extraordinary and wonderful a circumstance occasions, I hope will excuse it.

I resume the course I was pursuing, which was to show that long before the subject was brought before the Legislature of this State, and in very remote times, the near connexion of the waters of the Hudson and the Lakes was well understood.

The historian of the Five Indian Nations informs us, that Governor Burnet erected a Fort and trading houses at the mouth of the Onondaga River, on account, says he, "of its water communications with the country of the Iroquois, and for the facility of transportation between the Lakes and Schenectady, there being but three portages in the whole route; and two of them very short." These, no doubt, were the carrying places, at the Little Falls, the Wood Creek, and at the Oswego Rapids.

Kalm, a Swede, who travelled in this country in the year seventeen hundred and forty-eight, speaks of the near approach of the waters of the Hudson and the Saint Lawrence. Indeed, he seems to have supposed that there was a perfect communication from the former to the latter.

Carver, who traversed the Lake country in seventeen hundred and sixty-six, represents that a water passage between the Mohawk and Wood Creek was at that time effected at Fort Stanwix, by sluices.

In seventeen hundred and sixty-eight, Sir Henry Moore, in a Message to the Colonial Assembly, stated that "the obstruction of the navigation in the Mohawk River, between Schenectady and Fort Stanwix, occasioned by the falls of Canajoharie, had been constantly complained of, and that it was obvious to all who were conversant in matters of this kind, that the difficulty could be easily remedied by sluices, upon the plan of those in the great Canal of Languedoc in France, which was made to open a communication between the Atlantic ocean, and the Mediterranean."

I have made these few references to show that at a very early day, not only the Champlain route to Montreal, but what we now call the Ontario route to the Lakes, was perfectly well understood; and that it was well known that the water courses running westwardly and northwardly, and those running southwardly and eastwardly, were separated by low lands of very little extent. Any one that had traversed those portages, or heard them described, and knew that artificial water ways had been constructed in other parts of the world, must have thought of completing these water communications by Canals.

How much in vain, then, must it be to inquire who first thought of connecting the western, and northern, and southern waters? We might as well attempt to ascertain who had the first idea of making a highway between New York and Albany, or between any other important establishments in our country. Many had opportunities of acquiring all the knowledge connected with the subject, and it is probable that the thought of water communications, where they are now made by the Western Inland Lock Navigation Company, was common to hundreds at the same time.

Could we pursue this inquiry with any prospect of success, it would be a futile labour. The discovery would be of no benefit to the community, and but little more credit would be due to one to whom the original thought might be traced, if he did nothing towards executing the idea he had conceived, than if it had been a dream.

The revolutionary war had scarcely been concluded, when Washington saw in the improvement of the internal communications of this country, that, which, after her independence, most concerned her prosperity and happiness. The subject had occupied his mind before the revolution, we cannot ascertain at how early a date, but it is extremely probable that he was among those who first thought of the advantages and practicability of navigable water communications between the Lakes and the Atlantic. But no sooner had he sheathed his triumphant sword, and assumed the station of a private citizen, than he devoted himself to this object. In seventeen hundred and eighty-four he personally explored, not only what is now the route of the Champlain Canal, but the route which the Western Inland Lock Navigation Company adopted for their improvements. That is to say, the route by the Mohawk, Wood Creek, Oneida Lake, and Oswego River. This part of the life of General Washington, as written by Chief Justice Marshal, is so interesting, and so immediately connected with the subject which engages our attention,

that I am convinced the following extract will be acceptable.

"To a person looking beyond the present moment, and taking the future in to view, it is only necessary to glance over the map of the United States, to be impressed with the incalculable importance of connecting the western with the eastern territory, by facilitating the means of intercourse between them. To this subject the attention of General Washington had been in some measure directed in the early part of his life. While the American states were yet British colonies, he had obtained the passage of a bill, empowering those individuals who would engage in the work, to open the Potomac, so as to render it navigable, from the tide water to Wills' Creek. The River James had also been comprehended in his plan; and he had triumphed so far over the opposition produced by local interest and prejudices, that the business was in a train which promised success, when the revolutionary war diverted the attention of its patrons, and of all America, from internal improvements, to the great objects of liberty and independence. As that war approached its termination, subjects, which for a time had yielded their pretensions to consideration, reclaimed that place to which their real magnitude entitled them; and the internal navigation again attracted the attention of the wise and thinking part of society. Accustomed to contemplate America as his country, and to consider with solicitude the interests of the whole, Washington now took a more enlarged view of the advantages to be derived from opening both the eastern and western waters: and for this, as well as for other purposes, after peace had been proclaimed, he traversed the western parts of New England and New York. 'I have, lately,' said he, in a letter to the Marquis of Chastellux, a foreigner, who was in pursuit of literary as well as of military fame, 'made a tour through the Lakes George and Champlain, as far as Crown Point; then returning to Schenectady, I proceeded up the Mohawk River to Fort Schuyler, crossed over to Wood Creek, which empties into the Oneida Lake, and affords the water communication with Ontario; I then traversed the country to the head of the eastern banks of the Susquehanna, and viewed the Lake Otsego, and the portage between that Lake and the Mohawk River at Canajoharie. Prompted by these actual observations, I could not help taking a more contemplative and extensive view of the vast inland navigation of these United States, and could not but be struck with the immense diffusion and importance of it: and with the goodness of that Providence who has dealt his favours to us with so profuse a hand.

Would to God we may have wisdom enough to improve them! I shall not rest contented until I have explored the western country, and traversed those lines (or great part of them,) which have given bounds to a new empire."

Scarcely had he answered those spontaneous offerings of the heart, which, on retiring from the head of the army, flowed in upon him from every part of a grateful nation, when his views were once more seriously turned to this truly interesting subject. Its magnitude was also impressed on others; and the value of obtaining the aid which his influence and active interference would afford to any exertions for giving this direction to the public mind, and for securing the happy execution of the plan which might be devised, was perceived by all those who attached to the great work a sufficient degree of importance, and who were anxious for its success. In a letter from a gentleman, (Mr. Jefferson,) who had taken an expanded view of the subject, who felt an ardent wish for its accomplishment, and who relied on funds to be advanced by the public for its execution, a detailed statement of his ideas was thus concluded:—

"But a most powerful objection always arises to propositions of this kind. It is, that public undertakings are carelessly managed, and much money spent to little purpose. To obviate this objection is the purpose of my giving you the trouble of this discussion. You have retired from public life. You have weighed this determination, and it would be impertinence in me to touch it. But would the superintendence of this work break in too much on the sweets of retirement and repose? If they would, I stop here. Your future time and wishes are sacred in my eye. If it would be only a dignified amusement to you, what a monument of your retirement would it be! It is one that would follow that of your public life, and bespeak it the work of the same great hand. I am confident, that would you either alone, or jointly with any persons you think proper, be willing to direct this business, it would remove the only objection, the weight of which I apprehend."

In the beginning of the autumn of seventeen hundred and eighty-four, General Washington made a tour as far west as Pittsburgh; after returning from which, his first moments of leisure were devoted to the task of engaging his countrymen in a work, which appeared to him, to merit still more attention from its political, than from its commercial influence on the union. In a long and interesting letter to Mr. Harrison, then governor of Virginia, he detailed the advantages which might be derived from opening the great rivers, the Potomac and the James, as high as

should be practicable. After stating with his accustomed exactness the distances, and the difficulties to be surmounted in bringing the trade of the west to different points on the Atlantic, he expressed unequivocally the opinion, that the rivers of Virginia afforded a more convenient, and a more direct course than could be found elsewhere, for that rich and increasing commerce. This was strongly urged as a motive for immediately commencing the work. But the rivers of the Atlantic constituted only a part of the great plan he contemplated. He suggested the appointment of commissioners of integrity and abilities, exempt from the suspicion of prejudice, whose duty it should be, after an accurate examination of the James and the Potomac, to search out the nearest and best portages, between those waters and the streams capable of improvement, which run into the Ohio. Those streams were to be accurately surveyed, the impediments to their navigation ascertained, and their relative advantages examined. The navigable waters, west of the Ohio, towards the great Lakes, were also to be traced to their sources, and those which empty into the Lakes to be followed to their mouths. "These things being done, and an accurate map of the whole presented to the public, he was persuaded that reason would dictate what was right and proper." For the execution of this latter part of his plan he had also much reliance on Congress; and in addition to the general advantages to be drawn from the measure, he laboured, in his letters to the members of that body, to establish the opinion, that the surveys he recommended would add to the revenue, by enhancing the value of the lands offered for sale. "Nature," he said, "had made such an ample display of her bounties in those regions, that the more the country was explored, the more it would rise in estimation."

The assent and co-operation of Maryland being indispensable to the improvement of the Potomac, he was equally earnest in his endeavours to impress a conviction of its superior advantages on influential individuals in that state. In doing so, he detailed the measures which would unquestionably be adopted by New York and Pennsylvania, for acquiring the monopoly of the western commerce, and the difficulty which would be found in diverting it from the channel it had once taken. "I am not," he added, "for discouraging the exertions of any state to draw the commerce of the western country to its sea-ports. The more communications we open to it, the closer we bind that rising world (for indeed it may be so called,) to our interests, and the greater strength shall we acquire by it. Those to whom nature af-

fords the best communications, will, if they are wise, enjoy the greatest share of the trade. All I would be understood to mean, therefore, is, that the gifts of Providence may not be neglected."

But the light in which this subject would be viewed with most interest, and which gave to it most importance, was its political influence on the union. "I need not remark to you, Sir," said he, in his letter to the governor of Virginia, "that the flanks and rear of the United States are possessed by other powers—and formidable ones too: nor need I press the necessity of applying the cement of interest to bind all parts of the Union together by indissoluble bonds—especially of binding that part of it which lies immediately west of us, to the middle states. For what ties, let me ask, should we have upon those people, how entirely unconnected with them shall we be, and what troubles may we not apprehend, if the Spaniards on their right, and Great Britain on their left, instead of throwing impediments in their way, as they now do, should hold out lures for their trade and alliance? When they get strength, which will be sooner than most people conceive, what will be the consequence of their having formed close commercial connexions with both or either of those powers? It needs not, in my opinion, the gift of prophecy to foretell. The western settlers (I speak now from my own observations) stand, as it were, upon a pivot. The touch of a feather would turn them any way. Until the Spaniards (very unwisely I think) threw difficulties in their way, they looked down the Mississippi—and they looked that way for no other reason than because they could glide gently down the stream, without considering, perhaps, the fatigues of the voyage back again, and the time necessary for its performance; and because they have no other means of coming to us, but by a long land transportation through unimproved roads." Letters of the same import were also addressed to the governor of Maryland, and to other gentlemen in that state. To a member of the national legislature, he observed, "there is a matter which, though it does not come before congress wholly, is, in my opinion, of great political importance, and ought to be attended to in time. It is to prevent the trade of the western territory from settling in the hands either of the Spaniards or British. If either of these happen, there is a line of separation drawn between the eastern and western country at once, the consequences of which may be fatal. To tell any man of information how fast the latter is settling, how much more rapidly it will settle by means of foreign emigrants, who can have no particular predilection for us, of the vast

fertility of the soil, of the population to which the country is competent, would be unnecessary: and equally unnecessary would it be to observe, that it is by the cement of interest alone we can be held together. If then the trade of that country should flow through the Mississippi or the Saint Lawrence; if the inhabitants thereof should form commercial connexions, which we know lead to intercourses of other kinds, they would in a few years be as unconnected with us, as are those of South America. It may be asked how are we to prevent this? Happily, for us the way is plain. Our immediate interests, as well as remote political advantages, point to it; whilst a combination of circumstances, render the present time more favourable than any other to accomplish it. Extend the inland navigation of the eastern waters—communicate them as near as possible with those which run westward;—open these to the Ohio;—open also such as extend from the Ohio towards Lake Erie,—and we shall not only draw the produce of the western settlers, but the peltry and fur trade of the Lakes, also to our ports—thus adding an immense increase to our exports, and binding those people to us by a chain which can never be broken."

At about the time that General Washington was exploring that part of our state, which was so well calculated for the improvement of internal navigation, the attention of the legislature was directed to the same object. Christopher Colles, an inhabitant of the city of New York, who had been previously known for some important but unsuccessful enterprises for the public good, and who had, in the year seventeen hundred and seventy-two, given public lectures in Philadelphia, on the subject of lock navigation, in seventeen hundred and eighty-four, proposed to the legislature to improve the navigation of the Mohawk. His enterprise was thought too mighty for the public resources, but the legislature gave Mr. Colles some encouragement, by offering to secure to him and his associates, for ever, the profits which might arise from transportation on the river. The next year, on the reiterated application of Mr. Colles, the legislature granted him one hundred and twenty-five dollars, to enable him to make an essay towards the execution of his plan. This he seems to have done; and, in the same year, he published proposals for establishing a company to improve the inland navigation between Oswego and Albany. In this publication, Mr. Colles very forcibly anticipated all the advantages which a water communication with the lakes would afford. He evinces his knowledge of the country, by representing that "the Allegany

mountains, which pass through all the states, seem to die away as they approach the Mohawk River; and the ground," says he, "between the upper part of this river, and Wood Creek, is perfectly level."

Mr. Colles was again before the legislature with his plan, in seventeen hundred and eighty-six, and it seems to have met with their approbation; but nothing important or effectual was done by Mr. Colles. He lived till within a few years. The difficulties he met with seem to have subdued his enterprise. Though his plan for connecting the northern and southern, and eastern and western waters, was revived in seventeen hundred and ninety-one, it does not appear that Mr. Colles had any connexion with it. We may all remember him as the projector and attendant of the telegraph, erected during the late war, on Castle Clinton. Genius and talents, much above the sphere in which he seems to have moved in the latter part of his life, could not rescue him from obscurity and poverty; but it would be ungrateful to forget him at this time. No one can say how far we owe this occasion, to the ability with which he developed the great advantages that would result from opening the communications with the lakes; to the clear views he presented of the facility with which these communications might be made; and to the activity with which he for some time pursued his object. His contemporaries have not been insensible of his merits, and have preserved a portrait of him, by Jarvis, in the Gallery of the Historical Society.

Governor George Clinton, in his speech to the legislature, on opening the session of seventeen hundred and ninety-one, referred to the subject of internal improvements in the following language. "Our frontier settlements, freed from apprehensions of danger, are rapidly increasing, and must soon yield extensive resources for profitable commerce. This consideration forcibly recommends the policy of continuing to facilitate the means of communication with them, as well to strengthen the bonds of society, as to prevent the produce of those fertile districts from being diverted to other markets."

In the same session the legislature passed "an act concerning roads and inland navigation," by which the commissioners of the land office were directed to cause the grounds between the Mohawk River and Wood Creek, in Herkimer county, and between Hudson River and Wood Creek, in Washington county, to be explored and surveyed. The commissioners were also required by the act, to report an estimate of the expense of making canals between these points. In the same year, the surveys which

the act required were made; and in January, seventeen hundred and ninety-two, a report of the commissioners was communicated by George Clinton, the then Governor, by a message, in which he considers the practicability of effecting the object of the legislature, at a very moderate expense, as ascertained. He expresses a hope that a measure of such importance, not only to the agriculture and commerce of the state, but even to the influence of the laws, will continue to demand due attention.

The members who appear to have taken the most active part in these legislative transactions, were Mr. Adgate, Mr. Williams, Mr. Livingston, and Mr. Barker.

There were, also, many citizens not in the legislature, who had previously to this time greatly interested themselves in promoting this important measure. These ought to be named on this occasion, but I fear I have not the information which will enable me to do justice to all. General Schuyler deserves to be first mentioned. Distinguished by the force and energy of his character, for his abilities, acquirements, and enterprise, he was one of the earliest, most strenuous, and most able supporters of improvements in our internal navigation. It has been justly said that he was the master spirit which infused life and vigour into the whole undertaking. Mr. Elkanah Watson had, as early as the year seventeen hundred and eighty-eight, attended an Indian treaty at Fort Stanwix. The view he at that time obtained of the country, impressed him with the practicability and advantages of the water communications which Mr. Colles had, several years previously, explored and described in his publication above noticed. Of Mr. Colles's proceedings Mr. Watson appears to have had no knowledge. Mr. Watson transcribed the ideas he entertained on this subject, in a journal he kept at the time, extracts from which he published in eighteen hundred and twenty, in a work entitled, "A History of the Rise, Progress, and existing condition of the Western Canals." This publication is avowedly made by Mr. Watson, with a view to vindicate his claims "to the exclusive honour of projecting the canal policy" of the state of New York.

In the same year that the act of the twenty-first of March, seventeen hundred and ninety-one, was passed, for surveying the contemplated routes, Mr. Watson made a journey in the western part of the state. All his views of the water communications (which had been previously proposed by Mr. Colles) were confirmed and strengthened, and he employed his pen in writing and publishing essays, which, no doubt, had an important influence on public opinion

in favour of canals. He also published, in the work last referred to, his journal of this tour.

These private journals of Mr. Watson, by some means unknown to him, as he states in the preliminary remarks to his *History of the Canals*, were obtained by the London booksellers, and published by them, previously to seventeen hundred and ninety-five; and were, to the astonishment of Mr. Watson, referred to by Mr. Phillips, in his *History of Canals*; the first edition of which was published about thirty years ago.

In consequence of the favourable report of the commissioners, appointed by the act of seventeen hundred and ninety-one, and the recommendations of the governor, the act of seventeen hundred and ninety-two, by which the Western Inland Lock Navigation Company, and the Northern Inland Lock Navigation Company were incorporated, was passed. This act, it is said, was drawn by General Schuyler. He, and about fifty others of the most respectable and influential citizens, of the state, were members of the company. Mr. Thomas Eddy, who was an early, zealous, and active friend of internal navigation, was not named in the act, but was elected a member and director the year after the company was incorporated. General Schuyler was chosen president, and he, Messieurs Eddy, Jeremiah Van Rensselaer, Barent Bleecker, Elkanah Watson, and Robert Bowne, were among the most active members.

The object of the Western Inland Lock Navigation Company was to improve the navigation, and to open communications, by canals, to the Seneca Lake, and Lake Ontario. The other company was empowered to open a lock navigation between the Hudson and Lake Champlain. This latter company did something to improve the navigation of the natural water-courses to the north, but was dissolved without having made any canal, and without having effected any thing of great importance.

So Herculean a task did it then appear to construct a Canal, that the Western Company were allowed fifteen years to accomplish their work; though it was known that the canalling which they would have to perform would extend only a few miles.

But the company did not avail themselves of this long indulgence. In the year seventeen hundred and ninety-six, they completed the canal at the Little Falls, of about two miles and three fourths in length, with five locks; and a canal of one mile and a quarter at the German Flats; and in seventeen hundred and ninety-seven, a canal from the Mohawk to Wood Creek, of one mile and three quarters: in all less than seven miles, with nine locks. Some

years afterwards they constructed several wooden locks on Wood Creek. All the works which are above enumerated, and which, at the time, were thought very great, and which were so many years completing, might now be done in six weeks. Our great canals, with all their locks, aqueducts, culverts, bridges, and every thing that belongs to them, have been executed at the rate of more than a mile in a week.

The Western Company, after their principal works had been constructed and once rebuilt, when it was found that they must be again reconstructed, obtained the assistance of Mr. Weston, an engineer, from Europe, of eminence in his profession. He built the existing locks of the Western Company. When their improvements were so far completed as that a boat might pass from Schenectady into the Oneida Lake they had expended more than four hundred thousand dollars. This great expenditure obliged them to charge such heavy tolls, that their canals were but little used; land carriage, and the natural rivers, being generally preferred.

The old locks, at the Falls, now form part of a communication from the Erie canal, into the Mohawk River. When we stand on the lofty and magnificent stone aqueduct which is thrown over the Falls, or on the terrace which supports the western canal,—midway the precipitous rocks on the south side of the river, we look down on the old canal, passing below the new structure, creeping at our feet, through its narrow channel and straitened locks.

At this point there is a combination of the beauties of nature and of art, seldom to be met with. When the latter excite the admiration of an American citizen, he must find, blended with his feelings, something of pride arising from the reflection that their existence is owing entirely to the genius of his countrymen.

The prospect of a water communication from the Hudson to Lake Ontario, suggested the advantages of a like communication from that lake to Lake Erie. With a view to the establishment of this desirable object, an act was passed in seventeen hundred and ninety-eight, incorporating the Niagara Company.

The design of those who formed this association, was to make a canal, with locks, round the cataract of Niagara.

This project, in preference to that which has been executed, has had its advocates till a very late day. It is impossible to say, when we are looking for the dawnings of the idea of an artificial water communication between Lake Erie and the Hudson, whether those who first anticipated such a connexion, and

have mentioned it in their writings, did not contemplate this as the route by which the communication would be effected, rather than that it would be made on the line occupied by the canal which now exists.

But this act of seventeen hundred and ninety-eight, and the project of locking round the Great Falls, to which it was intended to give effect, seem very convincing proofs, that, up to this time, no person had thought of an inland lock navigation, directly from Lake Erie to the Hudson. Indeed, I may say, that up to the time when this act was passed, I have not found, in any thing written upon the subject, a single syllable intimating that the idea of such a canal had been conceived by any human being. It unquestionably had not entered into the minds of either of the companies incorporated in seventeen hundred and ninety-two. The views of the Western Inland Lock Navigation Company, certainly, extended no further than to improve the natural water-courses between the mouth of the Onondaga River and the Mohawk, and to connect them by the short cuts which were necessary for that purpose. To use Mr. Watson's own expressions, who was one of the Western Company, "the utmost stretch of their views was to follow the track of nature's canal, and to remove natural or artificial obstructions; but they never entertained the most distant conception of a canal from Lake Erie to the Hudson. They would not have considered it," continues Mr. Watson, "much more extravagant to have suggested the possibility of a canal to the moon."

The efforts of this company, on the Mohawk, had proved so expensive, and so little encouraging, that they shrunk from an attempt to complete their original design, by extending their work to Lake Ontario. In eighteen hundred and eight, they surrendered so much of their grant as gave them any privileges beyond the Oneida Lake. And, subsequently, when the legislature had determined on executing the northern and western canals, they ceded to the state, for a sum much less than they had expended, all their privileges and works.

But, although, those who were connected with these navigation companies, and who encouraged and promoted the objects of these associations, can not justly claim, indeed never have claimed, the merit of projecting the great canals, yet we should do them great injustice did we not acknowledge that we owe a great deal to their genius and enterprise. Their ill success, it is true, for some time damped the spirit of improvement, yet their efforts roused the public attention, and induced inquiries and investigations which have led to the great works, the

accomplishment of which we are about to celebrate.

The very peculiar character of the country about our great Lakes was very early known. It was seen that the Saint Lawrence, the Lakes, and the Mississippi, lay in a great valley, extending from the Bay of Labrador, to the Gulf of Mexico.

Monsieur de la Salle, who, in the year sixteen hundred and sixty-nine, first explored the Mississippi from the Lakes, found that the waters of Lake Michigan, and of the rivers which run to the south, nearly approximated. It was afterwards ascertained that at certain seasons they were united, and that the intervening waters might be navigated by boats of considerable burden. The near approach of the western waters of this state and of Lake Erie, was also conjectured, if not known, at a very early day. In the report before mentioned, made by the surveyor general of the province of New York to Governor Burnet, in seventeen hundred and twenty-four, after having mentioned the communication into Lake Ontario by the Onondaga River, he says:—"Besides the passage by the Lakes, there is a river which comes from the country of the Senecas, and falls into the Onondaga River, by which we have an easy carriage into the country, without going near the Cataragui Lake. The head of this river goes near the Lake Erie, and probably may give a very near passage into that Lake, and much more advantageous than the way the French are obliged to take by the great falls of Jagara."

It must be recollected that these, or similar passages, are not cited to prove that there were in the minds of the authors, ideas of a canal over the routes to which they refer; but the object in noticing these speculations, is, to show that, when canals became afterwards more known and practised, such descriptions of the country and its waters, may very naturally have suggested the possibility of making canals in situations so well adapted to them. These ideas might, and probably did, arise in the minds of many contemporaneously; and that, therefore, it would be vain to endeavour to discover who first suggested the practicability of making the western canal; upon which so much is now said, only because it has heretofore been a subject of such earnest inquiry and discussion.

We have seen, from the pamphlet published by Christopher Colles, in seventeen hundred and eighty-five, that as early as at that day, the extraordinary adaptation of the country, on our western borders, for water communications, had been perceived. His expression that "the Allegany mountains died away,

as they approached the Mohawk," shows that he had some idea of the path which nature has provided for the great western canal. It was known too, long before that project was undertaken, that the waters of Lake Erie, lying above the Great Falls, must be higher than the waters of the Hudson. In a communication from Mr. Charles Thompson, who was so long secretary of the continental congress, to Mr. Jefferson, which the latter has appended to his Notes on Virginia, published in seventeen hundred and eighty-seven, Mr. Thompson supposes, that if the barriers of the Niagara River were, by any convulsion of nature, to be torn asunder, the country below would be deluged.

It must have been seen, also, that many of the interior lakes were so high, that their outlets traversed the path which the canal now occupies.

It is worth while to stop here to remark, that the location of several of these minor lakes, gives a character to our western canal, which is very peculiar. Generally, canals have been made to form connexions over ridges, dividing seas, or natural navigable channels, and commonly pass near the sources of the water-courses by which the canals are to be supplied, and, therefore, one of the greatest difficulties in their construction, and one that frequently leads to enormous expenses, is to obtain a sufficient supply of water, and to economize that element. But our western canal passes through a valley, and intercepts, near their points of discharge into the great lakes, water-courses, supplied by inexhaustible sources, and owing to the supplies being drawn from natural reservoirs, of great magnitude, it has not been necessary to construct an artificial one, for either of the canals, through their whole extent of more than four hundred miles.

These very extraordinary features of our country, would very probably suggest to any person acquainted with them, the idea of making water communications over the grounds which are now occupied by the canals. As the country was cleared of forests, and became inhabited, its topography was better known, and very probably from a suggestion that a continued canal from Lake Erie to the Hudson, (in which the person who made it may have had no confidence,) the subject has been revolved in the minds of many, till it was found deserving consideration; and finally, to be worthy of serious examination; the favourable result of which led to the determination to execute the project.

No one seems to have had an earlier or a more vivid conception of the features of the country, between the Hudson and the western lakes, which fitted it so pecu-

liarily for canal navigation, than the late Mr. Gouverneur Morris. The lakes, the rivers, the valleys in which they lie; the advantages and profit to be derived from extensive inland water communications, and their political influence, were subjects suited to the great mind of Mr. Morris, and inspired those enthusiastic anticipations which his pen has left us.

Previously to the year eighteen hundred, he does not appear to have had any definite idea of a canal extending beyond Lake Ontario. In a letter of that time, to Mr. Lee, he seems to fix that as the point to which he thought it was practicable to open a canal. But at about the same period, in a letter to a European correspondent, he expresses his belief in the practicability of enabling ships to sail from London, through the Hudson, into Lake Erie.

In eighteen hundred and three, in a conversation with Simeon De Witt, Esquire, the present surveyor general, who deserves to be ranked among the early and zealous friends of the canals, Mr. Morris spoke of the possibility of "tapping Lake Erie." But yet it is very uncertain whether Mr. Morris's idea was, at these times, that a canal might be made directly from the Hudson to that Lake. He might have conceived, that a ship from London would sail into Ontario by the canal, which had then been so long thought of; and from thence, into Erie by the locks round the falls, which were contemplated by the act of seventeen hundred and ninety-four: and he might have conceived the possibility of tapping Lake Erie, by leading its waters in the same course. But, subsequently, and particularly at about the time the project of making a canal from Lake Erie to the Hudson first attracted the attention of the legislature, Mr. Morris became one of its most active and able advocates.

In eighteen hundred and seven, Mr. Jefferson, then President of the United States, proposed to congress to devote so much of the national revenue, as the exigencies of the government did not require, which he calculated would be very large, to making roads and canals. That part of the message of the President, which related to these subjects, was referred to the secretary of the treasury, Mr. Gallatin, who, in eighteen hundred and eight, made a very able report; but the possibility of a canal, from Lake Erie to the Hudson, had not occurred to him; or, if it had, he did not perceive its advantages so far as to be induced to mention it among those which he recommended, as deserving the consideration of the government.

This message of the President was well calculated to awaken the attention of the respective states, to the advantages they possessed for internal navigation.

Mr. Jesse Hawley, in the fall of eighteen hundred and seven, published a number of pieces under the signature of "Hercules," in which he advocated, with great ability and force, the construction of a canal from Buffalo to Utica, and proposed very nearly the same route which is now occupied by the western canal. We can not doubt but that these able essays had a great influence on the public mind.

Mr. Geddes, who, from the beginning, has had so large and active a part in planning and executing the canals, in the year eighteen hundred and eight, intimated, that it was the opinion of many, that a canal might be made from Erie to Rome. Mr. Elliot, who was afterwards one of the commissioners, in a letter to the surveyor general, written in July, eighteen hundred and eight, very strongly recommends a communication to Lake Erie, in preference to the Ontario route.

In the session of eighteen hundred and eight, Mr. Joshua Forman, a member of the assembly from Onondaga county, proposed, in that body, a concurrent resolution to direct a survey to be made, "of the most eligible and direct route of a canal, to open a communication between the tide waters of the Hudson River and Lake Erie." This is the first legislative proceeding, of which there is any trace, that had reference to a canal from the Hudson to Lake Erie.

This resolution was adopted, and subsequently, by a joint resolution proposed by Mr. Goold, in the senate, the surveyor general was directed to cause the survey, contemplated by Mr. Forman's resolution, to be made; but so limited were the views the legislature, at this time, had of the great work in which they were about to engage, that they appropriated for the object of the resolution, no more than the sum of six hundred dollars.

The surveyor general employed Mr. Geddes, who has been before mentioned, to make this survey. He performed the duty with great intelligence; and, in January, eighteen hundred and nine, made a report in favour of the practicability of a route, directly from Lake Erie, which evinces how fortunately the agent had been selected.

Mr. Geddes conceived the possibility of running the canal on the tops of the ridges which occupy the Irondequoit valley; a project which would not have occurred to any but an engineer of great boldness and comprehension.

Mr. Geddes's report was made to the surveyor

general, and was by him communicated to the legislature. But nothing appears to have been done, till in March, eighteen hundred and ten, when Jonas Platt, Esquire, then a member of the senate, who has been among the foremost, on so many occasions, to encourage and support this great enterprise, proposed, in that body, a resolution which was unanimously adopted by the senate, and concurred in by the assembly, to appoint Gouverneur Morris, Stephen Van Rensselaer, William North, Thomas Eddy, and Peter B. Porter, "commissioners to explore the whole route for inland navigation, from the Hudson River to Lake Ontario, and to Lake Erie."

The legislature had before them, at that session, memorials from many citizens in different parts of the state, representing that Canada was attracting the greatest part of our internal commerce, in consequence of the facilities which were afforded by water communications, to transport commodities to her markets. These representations, no doubt, had their influence, but the above resolution, it appears, was brought forward by Judge Platt, at this time, on the suggestion of Mr. Thomas Eddy, the gentleman before mentioned, who had taken so active and leading a part in the concerns of the Inland Lock Navigation Companies, and who was so long the zealous and active friend of the canals. Judge Platt and Mr. Eddy engaged our present governor, De Witt Clinton, who was then also a member of the senate, to support Mr. Platt's proposition. From that time, Mr. Clinton has been the able, constant, indefatigable, and undaunted advocate and supporter of these great works.

They also found, at about this time, an able advocate in the late Doctor Hugh Williamson.

The memory of this distinguished citizen will be preserved, not only by his History of North Carolina, and other works which he published, but by a Biographical Memoir, written by Doctor David Hosack.

Doctor Williamson, in eighteen hundred and ten, wrote an essay, entitled, "Observations on Navigable Canals;" also, "Observations on the means of preserving the Commerce of New York;" and, "Additional Observations on Navigable Canals;" all of which had reference to the canals of New York, and are preserved in Hosack and Francis's American Medical and Philosophical Register.* In his Biography, Doctor Hosack remarks, that "Doctor Williamson was among the first of our citizens who entertained correct views as to the practicability of forming

* The editors of this journal seem to have embarked with no inconsiderable zeal in furtherance of the canal policy of this state, by their publication, with comments, of various reports and docu-

ments in behalf of the measure, at this early period of the undertaking, in a work nominally limited to discussions of a medical, and physical character.

a canal to connect the waters of Lake Erie with Hudson River; and the importance of this great work so engaged his feelings, that besides the papers already mentioned on canal navigation, he published a series, on the same subject, under the signature of Atticus. These papers were so well received, that many thousand copies have been circulated through the medium of newspapers, and the pamphlet has itself been several times reprinted."

In the summer of eighteen hundred and ten, the above named commissioners explored the whole route, from the Hudson to Lake Erie; and, at the session of eighteen hundred and eleven, they made their first report, which was drawn up by Mr. Morris, who acted as president of the board.

It proposed a project, which, although the report was signed by all the commissioners, it is understood was entirely his own. It was to bring the waters of the Lake on one continued uninterrupted plane, with an inclination of six inches in every mile, to a basin, to be formed near the margin of the Hudson, from whence there was to be a descent by a great number of locks. This project was thought by many to be impracticable; and its having been presented as a plan, which the commissioners recommended, was calculated to retard the enterprise; but the report bears testimony to the genius and the eloquence of the writer.

Immediately on the receipt of this report, Mr. Clinton brought in a bill, which was passed on the eighth of April, eighteen hundred and eleven. This was the first law passed on the subject of the great canals. It added Robert R. Livingston, and Robert Fulton, to the former commissioners, and charged the Board with the consideration of all matters relating to the navigation between the Hudson and the Lakes. It authorized them to apply to other states, and to congress, for co-operation and aid; to ascertain if loans could be procured; and to treat with the Inland Lock Navigation Companies, for a surrender of their rights and interests.

The legislature was induced to give the commissioners power to apply to congress, because reliance was placed on receiving the assistance which the message of Mr. Jefferson, of eighteen hundred and seven, and the report of Mr. Gallatin, although he had not mentioned the Erie Canal, seemed to promise to enterprises of this nature.

The commissioners, pursuant to the powers given them by the last mentioned act, applied, in the ensuing year, to the general government, to afford some aid to a project, no less interesting to the nation, than to the state in which it was to be executed. Two of the commissioners, Mr. Morris and Mr. Clinton,

attended at the seat of the national government, to promote the success of this application. It was not rejected, but it met with no great favour. It was thought that nothing could be done for New York, that was not done for the other states, and the negotiation of the commissioners ended in a proposition brought before the house of representatives, by a committee of that body, to appropriate to each state certain portions of the public lands, to be applied by the respective states, to the improvements of their internal communications. But the bill reported by the committee, was never acted upon in the house.

There was at that time, however, no question but that congress had power to afford assistance, if it were their pleasure to do so; and there was no little disappointment when, in eighteen hundred and seventeen, it was understood that Mr. Madison conceived that the constitution would not permit an appropriation of any part of the national funds or means to these purposes.

This disappointment was the greater, because no objection had been made by the executive, to several acts of congress, appropriating very large sums of money, for making a road through parts of Maryland, Virginia, and Pennsylvania, and for similar objects elsewhere. It was not very well understood how the constitution could allow an appropriation for roads, and not permit it for a water highway.

But most happily for us, this objection prevailed so long as the state of New York needed the aid of the general government; and most happily for every other state in the union, these scruples have since entirely subsided. We have been so fortunate as to complete our canals without any extraneous aid, and we are gratified that the other states, in enterprises similar to ours, will be aided by funds from the national treasury, and will have the assistance of the distinguished foreigners and natives, who are employed in the engineering departments of the general government.

But we have yet one humble petition to make to congress. That having made our canals without their interference, they will be pleased to leave us to enjoy them; and that they will not sanction any such pretension, as was of late made by some of their revenue officers, that our canal boats, traversing our hills and valleys, in an artificial channel made by ourselves, entirely within our own territory, hundreds of miles from the sea, and six or seven hundred feet above its level, were engaged in the coasting trade of the United States; that they must therefore take custom-house licenses, and pay a tax to the general government.

An act of congress has been passed, exempting boats employed wholly on the canals from the necessity of paying this tax, yet the claim of a right to impose it seems to be reserved. But so long as any respect for state sovereignties remains; so long as the confederacy is considered of any value, and so long as there is any regard for the peace of the union, it is hoped there will be no attempt to enforce this, or any similar claim.

The canal commissioners, pursuant to the authority given to them by the Act of eighteen hundred and eleven, made application to other states, and among them to our younger sisters, Vermont, Kentucky, and Ohio, proposing to them that, as they would enjoy the benefits of the contemplated improvements in the means of internal communication, they would also participate in the expense? We are not aware that any answer to this invitation of the commissioners was returned by any state but Ohio. She made a very kind and complimentary answer, in the form of a resolution of her legislature. The substance of which was, that we had her best wishes; that she knew very well she would be greatly benefited if our enterprise should be executed, but that she was well assured we could do it ourselves; that she was very young and not rich; she, however, testified her disposition to serve us so far as her resources would justify, if she approved, when made known to her, the plan we proposed to adopt.

Fortunately we have had no occasion to remind Ohio of this engagement, and every friend of internal improvements, must rejoice that no part of her resources have been diverted from the great work in which she is now so nobly engaged. When it is accomplished, as undoubtedly it will be, in a very short time, she need not fear to compare it with any thing of the same nature which has been achieved in this or any other part of the world. When it is considered that the population of her territory in seventeen hundred and ninety, did not exceed three thousand souls, her canal, when it is completed, will be a stronger evidence, than the world has yet afforded, of what can be done by the moral energies of a free people, guided by wise, enterprising, and magnanimous counsellors.

By opening a channel between Lake Erie and the trans-Allegany navigable waters, Ohio will render us infinitely a greater service than she could have done by any contribution to our funds. She will not lay out a dollar on her canal, that will not be nearly of as much advantage to us as to herself. It would be to our interest to open the communication on which Ohio is now engaged, at our own expense,

and to let it be a free passage, rather than it should not be done. We could not employ the large surplus funds, which our canals will afford, more to our own advantage, than by anticipating them, and making loans to Ohio, if she should need such assistance.

When there is a canal communication between the waters of the Ohio and the Lakes, a person may travel in a vessel from New Orleans to New York, and pass the Allegany mountains by water.

Had this been predicted only ten years ago, and the prediction been credited, we should have looked for some great convulsion of nature, by which the lands and the waters on the face of the earth would be displaced. It would never have been believed that the hands of man could effect so mighty a change.

It is not only Ohio that our example has stimulated and our success encouraged, but every state in the union is projecting artificial water communications. Our interest, as well as our feelings, are united in our wishes for their success. We do not forget that the state of New York is but a member of the great political family, and that our welfare is intimately connected with the prosperity of the whole. But as respects our own particular interest, we must wish to promote the improvement of inland navigation in every part of the union; for it is certain that no canal can be opened in the United States, which will not be a benefit to us. However remote, it will be a channel through which commerce will be attracted by our great emporium, the local situation of which precludes a rival. If any part of the produce of our own state should be drawn from us, it will be because elsewhere it will find a more profitable market. The object of all our improvements is the advantage of our citizens, and if some should find the greatest profit in trading to places without our territory, yet it must be for the general good of the state; the prosperity of which depends on the welfare of its inhabitants. If communities can be so connected as that no jealousies or separate interests can arise between them, the Ohio and New York canals are bonds that will unite these two states in perpetual amity.

In eighteen hundred and twelve, a second report was made by the board of commissioners, to the legislature. And at that session an act was passed, authorizing the commissioners to borrow, on the credit of the state, five millions of dollars, to be applied to the execution of the canals.

From this time, till the conclusion of the late war with Great Britain, little appears to have been done towards carrying into effect the then existing canal laws. But in the mean time, that is, in March,

eighteen hundred and fourteen, the commissioners presented another report, in which they reiterated their opinion that the canals were practicable; that the state could command competent resources, and warmly urged the execution of the project. The attention of the legislature, however, was engrossed by the then existing war. In consequence of the disarrangement of the national finances, the state of New York was obliged to employ its funds on objects which properly belonged to the general government; and besides, a very considerable opposition had arisen to the improvement of our inland navigation, upon the great scale which the commissioners had proposed. Many believed in the impracticability of the project; others, who admitted that it might be accomplished, thought the work too mighty for the power and resources of the state.

It was also unpropitious to the adoption of the great design, that the friends of improvements in internal navigation differed in opinion as to the course which ought to be pursued; some thinking that the Ontario route, which has been before explained, should be preferred to carrying the canal directly to Lake Erie. Under the influence of these feelings and opinions, the legislature, in the session of eighteen hundred and fourteen, repealed that part of the then existing law, which empowered the commissioners to borrow five millions of dollars.

However dissatisfied the friends of the canals were with this repeal, it has turned out to be one of those measures which though they appeared unpropitious at the time, we now see were most fortunate. The war prevented the employment of a foreign engineer, and the repeal in question, prevented our making loans abroad. The consequence of this last measure has been, that every cent borrowed on account of the canals was obtained of our own citizens, and the interest is paid to them, or to foreigners who have purchased the stock at an advance.

Perhaps the war itself, discouraging as were its immediate effects, may be set down as one of those events which finally had a tendency to promote the commencement and execution of the canals. The want of a practicable communication, for the conveyance of materiel of war, from the sea-board to the western frontier, was grievously felt. It has been said that the expense of transporting cannon from Albany to the lakes, was at one time, more than double what the pieces cost. The postponement of the project for a few years was also fortunate, inasmuch as it brought the commencement and execution of it to a time when money could be more easily obtained, and on better terms, than it could have been

at, perhaps, any prior, or hitherto, subsequent period.

The retraction of the power to make loans, for a time abated the zeal for improvements in inland navigation. The commissioners made no report in eighteen hundred and fifteen.

But the spirit which had been hushed by the clamours of war, was again heard when peace was restored. At the instigation of Mr. Eddy, Judge Platt, Mr. Clinton, Mr. John Pintard, and some others, a few respectable and influential citizens were convened, in New York, in the latter part of the year eighteen hundred and fifteen.

This meeting appointed a committee to draw a memorial to the legislature in favour of the projected inland navigation.

The duty assigned to this committee was performed by their chairman, Mr. Clinton, who prepared what has been distinguished, and will always be remembered, in the history of the canals, as the New York memorial. Its presentation formed an epocha in the progress of these works, from which their earnest and active pursuit may be dated. Their practicability, usefulness, and advantages, were stated with so much clearness, ability, force, and eloquence, that, from that time, all opposition was unavailing. Petitions of the same character, from different parts of the state, and signed by many thousand citizens, were presented at the ensuing session of the legislature.

Governor Tompkins, in his opening speech, recommended the subject to the attention of the two houses.

The commissioners made a report in favour of an immediate commencement of the work. While they adverted to the great western canal, as an undertaking which combined the honour, interest, and political eminence of the state, they expressed their conviction of the expediency of adopting measures to connect the waters of Champlain with the Hudson.

It appears, that previously to this time, there had been no thought that our own country could furnish engineers of sufficient ability, science, and experience, to execute a work which, in this state, was entirely new. The ill success of the first Inland Lock Navigation Companies was calculated to give us very humble opinions as to the requisite talents of our citizens. But it has been the good fortune of this country, whether in war or in peace, to find men rising from her soil adequate to every emergency. Of this, the execution of these canals, surpassed in no respect by any on earth, is a striking example. When we see them, or read their history, the reflection, that none but native American citizens have had any share in devising, planning, or superintend-

ing, any part of the work, must add to our gratification. We may hope that in time it will be questioned whether the opinion be correct, which has been promulgated by some European philosophers, and seems yet to be entertained by some trans-atlantic statesmen and reviewers, that the human species, by transportation to the new world, has degenerated in mental faculties and physical powers.

The commissioners, under the common impression that they would be obliged to look abroad for assistance, sought in Europe a civil engineer. Had it not been for the intervention of the war, one they had engaged would have shared the credit which is due to Wright, Geddes, White, Thomas, Roberts, and Briggs. Indeed, it seems that the acting commissioners, Messieurs Holley, Young, Seymour, and Bouck, discharged, in a great degree, duties which would properly belong to engineers; while, at the same time, they were united with the other commissioners, in the general direction and superintendence of the works.

In one of their former reports the commissioners mentioned that an English engineer had been engaged, but they now stated that their inquiries, and the intercourse they had had with many of our citizens in exploring the routes of the canals, and making surveys, had induced them to believe, that it was not necessary to go from home to seek the requisite talents and qualifications; and in their report of this year (eighteen hundred and sixteen,) they express their disposition, in giving their employments, to prefer our own citizens. This report was signed by Mr. Van Rensselaer, Mr. Clinton, Mr. De Witt, Mr. North, Mr. Eddy, Mr. Porter, and by Mr. Charles D. Cooper, who had been appointed by Governor Tompkins, to fill a vacancy in the board, occasioned by the death of Robert R. Livingston, Esquire. Mr. Morris did not sign the report, because, it has been said, he was dissatisfied that his idea of an inclined plane was in a great measure abandoned. The signature of one other commissioner was wanting—that of Robert Fulton, who died in the month of February, in the preceding year.

It is impossible to refer to the deaths of Mr. Livingston, and Mr. Fulton, without wishing to pay some tribute to their memories. It is particularly due to them upon this occasion, because they were zealous promoters of the great enterprises, the completion of which we are about to celebrate. Mr. Fulton's opinions had the more weight, as it was well known that he was professedly a civil engineer, and had published a valuable work on internal navigation. His great success in the application of steam to propel vessels, which has given him immortality,

added to the influence of his character,—his plain, unpretending, Franklin-like style of writing, was well suited to the occasion,—his correspondence with Mr. Morris, published on the incipency of the project, had as much influence in disposing the public mind to favour the great national work, which, to use his own expressions, "is to secure wealth, ease, and happiness to millions," as any thing that has been written on the subject. So much was he in favour of canals, that, in a letter to Mr. Morris, he enters into calculations, which appear to demonstrate that the merchandise, transported in sloops on the Hudson, might be conveyed on a canal between New York and Albany for less than they can be carried on the river, including in the estimate the cost of the canal.

But it does not always please Providence that the benefactors of mankind shall live to share the fruits of their labours. Their reward is in the contemplation of the happiness they will be the means of transmitting to posterity, or, perhaps, it is, in being permitted to look down upon the enjoyments of the beings whom they have benefited. If so, we may believe that the spirits of Morris, of Schuyler, of Livingston, and of Fulton, will be with us when we celebrate an event which they contributed so much to produce.

The same incredulity as to the practicability of the western canal, and the same apprehensions as to the capacity of the state, continued to raise an opposition in the legislature. Many attempts were made to arrest, or at least to curtail and postpone the project; but the opposition was unavailing. The act of eighteen hundred and sixteen, to provide for the improvement of the internal navigation of the state, was passed in the assembly, by a majority of seventy-three; and in the senate, by a majority of thirteen.

By this act, Mr. Van Rensselaer, Mr. Clinton, Mr. Young, Mr. Ellicot, and Mr. Holley, were appointed commissioners. They were empowered to devise and adopt measures to effect communications, by canals, between the Hudson and Lake Erie, and Lake Champlain, and to appoint engineers. Twenty thousand dollars were appropriated for the necessary expenses of executing the act; but no power was given to the commissioners to begin the work. On the contrary, a clause, which was in the bill to that effect when it was first reported, was stricken out.

The commissioners met in the city of New York, in May, eighteen hundred and sixteen. They appointed Mr. Clinton, President; Mr. Young, secretary of the board, and Mr. Holley, their treasurer. They divided the Erie Canal line into the western, middle, and eastern sections. The first, extending

from the lake to Seneca River; the middle, from thence to Rome; and the eastern, from Rome to Albany; and appointed engineers to each section. An engineer was also appointed to survey a route, which had been proposed for the canals on the south side of the mountain ridge. This route had many advocates, but was finally relinquished.

Previously to the commencement of the session of eighteen hundred and seventeen, the commissioners, or some of them, with the assistance of the respective engineers, had explored the routes of both the canals, and had caused them to be surveyed and marked.

When the legislature met, a report was presented, of great length and minuteness, with profiles and maps. The report also submitted estimates; those for the western canal amounted nearly to five millions of dollars, and those for the northern canal to about nine hundred thousand. These estimates have been exceeded, but it is owing to the canals having been enlarged; to the substitution of stone, in many instances, where wood was contemplated; and to some unforeseen difficulties; particularly at the mountain ridge, in the hardness and extent of the rock, which it was found necessary to excavate.

Notwithstanding the general government had discovered that the constitution of the United States would not allow it to give any countenance to an enterprise, for internal improvement, in the state of New York, and notwithstanding there was no reason to hope for any aid from our neighbours, the friends of the canals were not disheartened. In April, eighteen hundred and seventeen, the act, "respecting the navigable communications between the great northern and western lakes, and the Atlantic ocean," was passed by large majorities, both in the senate and assembly. It continued the former commissioners, and contained the important fiat, which authorized the commencement of the canals.

By this act, the commissioners were empowered to open the communication between the Hudson and Lake Champlain, but as to the west, they were only authorized to connect, by canals and locks, the Mohawk and Seneca Rivers.

The draft of this bill was prepared by Mr. Clinton, and the act was passed nearly as he drew it. In it was incorporated a financial system, which, at the request of a committee of the legislature, he had digested. Part of this system was the establishment of the board of commissioners of the canal fund, consisting of the lieutenant governor, the comptroller, the attorney and surveyor generals, the treasurer, and the secretary of state. This board was charged with every thing that concerned financial operations in re-

lation to the canals. The bill provided ways and means to pay the interest on loans which might be made, and the debts that would be created. These were donations of lands, which had been promised or made by individuals or companies, who would be particularly benefited by the canals; a small tax on salt manufactured at the salt springs, belonging to the state, and in the western country; a tax on steam-boat passengers; a portion of the duties arising on sales at auction; proceeds from certain lotteries; and a tax of two hundred and fifty thousand dollars, to be levied, at some future time, on lands lying within twenty-five miles of the canals.

The last mentioned tax never has been, and probably never will be, collected. Nor is it very certain that in justice and equity it ought to be. This partial tax was imposed, upon the supposition that the land holders along the lines of the canal would be particularly benefited by them; but in truth, every part of the state derives advantages from these works, which may, with great propriety, be said to be incalculable. The inhabitants of the city of New York, will derive as much profit from the opening of these water communications, as any other portion of our citizens; and if the expenses of the canals are to be paid in proportion to the local benefits which will be derived from them, New York ought to pay at least as large a share as any part of the state.

Since the supreme court of the United States has decided that the grant to Livingston and Fulton, of an exclusive right to navigate the waters of the state, by steam, was invalid, there has been no attempt to collect the tax on steam-boat passengers. The lotteries have produced nothing; so that the only remaining ways and means are the donations, the salt tax, the auction duties, and the canal tolls. These have afforded all the funds it has been requisite for the state to provide; and these great works will be paid for, in probably less time than it required to construct them, without the imposition of any general tax, and without their cost having been felt by the people in the slightest degree. But, on the contrary, the construction of the canals has been the means of putting in circulation about a million of dollars a year, for the last eight years, in parts of the country, where every thing was stagnant for want of money and a market.

On the fourth of July, eighteen hundred and seventeen, the canal was commenced at Rome—that is, eight years and four months, prior to the day when the first boat, which entered the canal from Lake Erie, will reach the ocean.

This important act, the commencement of the Erie

canal, was performed with some ceremony. Mr. Clinton, the president of the board, who had been chosen governor at the previous election, in eighteen hundred and seventeen, attended with the other canal commissioners and engineers. The anniversary of our independence, since the declaration of which only forty-one years had elapsed, was selected as an auspicious day to begin this great work. The first earth was removed from the canal path, amidst the acclamations of a large concourse of people, exulting in the past, enjoying the present, and anticipating the future.

Governor Clinton opened the session of eighteen hundred and eighteen, with a speech, congratulating the legislature on the auspicious commencement and successful progress of the water communications between the great western and northern lakes, and the Atlantic ocean. He expatiated on the advantages which agriculture, manufactures, and commerce, would derive from the canals, and on the influence which they would have on our political institutions. He assured the legislature that the resources of the state were adequate to the work, and that extraneous aid was unnecessary.

But notwithstanding the encouragement which this speech was calculated to afford, and the eloquent appeal with which it concluded, the project (for what was called by its friends "the great canal," and by its opponents the "big ditch") met with considerable and very able opposition. The strength of its friends and adversaries was tried in the assembly, on an answer reported by a committee, to the governor's speech. Fears were yet entertained that the anticipations of the execution of so great an enterprise, in any reasonable time, and with means which the state could provide, were enthusiastic and visionary. Many adopted an opinion, which one of our greatest statesmen, whose zeal for internal improvements could not be questioned, was known to have expressed, that we had undertaken this great enterprise a hundred years too soon, and that till the lapse of another century, the strength of our population, and our resources, would be inadequate to such a work.

But the part of the Answer which related to this subject, was adopted, without alteration, by a majority of nearly two to one. The Answer expressed, in a few words, the views which were at that time entertained by the friends of the canals. I therefore beg leave to extract some passages from it. I do it the more willingly, because the last paragraph is but an echo of the words in which the governor made the eloquent appeal with which that part of his speech, which related to this subject, concluded.

"The advantages which must result, not only to this state, but to the world, from the completion of the contemplated communications between the inland seas, on our borders, and the Atlantic ocean, are so manifest, that we can not but express the great satisfaction with which we learn, from your Excellency, that they have been auspiciously commenced, and are in successful progress. This satisfaction is greatly increased by the information you have given us, that this stupendous work may be performed at an expense not exceeding, in the aggregate, the estimates of the commissioners, and that our resources are fully adequate to them, without extraneous aid. We believe that no part of the world affords so many natural advantages for the execution of such an undertaking. Inexhaustible reservoirs lying above the level of the canal in every part of its course; a country, not intercepted by ridges or mountains, which commonly separate the heads of water courses, are in themselves advantages, that no work of the same kind has, as we believe, ever before enjoyed. The great causes of expense in the execution of similar projects have been the necessity of passing near the summits, on which were situated the fountains which supplied the water, and the works, on that account necessary, to economize the use of that element. There is reason to believe that the ingenuity and industry of our countrymen, will enable us to do more work of this kind, than has been done elsewhere for the same money, notwithstanding the price of labour is, probably, greater than has been paid to those who have executed similar enterprises.

"The effects of opening these communications can, as yet, be but indistinctly seen in their extent. They will reach every member of the community;—they must be felt by every citizen of the United States; and, indeed, so important an alteration in the natural disposition of the lands and waters of the earth can not but have an influence on the condition of mankind. It will afford the means of easy intercourse with an internal sea-coast, connected with immeasurable tracts of fruitful soil, not inferior in extent to the shores of the Mediterranean. When these works are accomplished, a water communication between the Lakes and the Mississippi, and forty or fifty thousand miles of navigable streams, may be made without difficulty, and at inconsiderable expense. The commerce of an immense space will be led to the Hudson. If this should be the result of the great enterprise in which we are engaged, New York will have advantages infinitely greater than any city has ever had, and she must for ever enjoy them without a rival. The commerce of the Mediterranean is the support

of many great commercial cities, but New York will stand alone at the entrance of this extensive channel, and must be a greater emporium than ever called herself the mistress of commerce.

"Besides the advantages which your Excellency has enumerated, and which it is so obvious, will be the result of the accomplishment of this stupendous work, there is certainly a national glory connected with the enterprise, calculated to excite the pride of every patriot. When we consider that every portion of the nation will feel the animating spirit and vivifying influence of these great works, that they will receive the benedictions of posterity, and command the approbation of the civilized world, we are required to persevere, so far as a prudent regard to the resources of the state will permit, by every consideration which ought to influence the consciences, and govern the conduct of a free, enlightened, and magnanimous people."

The commissioners, Mr. Van Rensselaer, Mr. Clinton, Mr. Young, and Mr. Holley, made a very minute, elaborate, and encouraging report. Among other matters which were very satisfactory, they stated that they had engaged, on the section that they had commenced, Mr. Isaac Briggs, an eminent mathematician, who has rendered important services in the progress of the canals.

The commissioners also stated, that they had begun by dividing the middle section of the canal line into small sections, and procuring the work to be done on these by contract. Perhaps nothing has contributed more to the successful accomplishment of the work than that the commissioners have so generally persevered in this plan. It was gratifying also to learn from the commissioners' report, that the engineers, and the young men they had employed as assistants, had evinced capacity and talents, which left no room to fear that we should be obliged to seek abroad mental or scientific aid.

The session of eighteen hundred and nineteen, was opened by a speech of Governor Clinton, no less satisfactory than that of the last year. He was enabled to reiterate his congratulations on the progress of the work, as well on the northern as on the western canal, and to give assurances that the experience which that progress had afforded, left not a doubt of the feasibility of the work, or of the ability of the state, without any taxes, or any other means than those which had been already provided, to meet the necessary expenditure. He therefore warmly recommended that a law should be passed, authorizing the completion of both canals, as soon as was practicable.

After a very favourable report from the canal commissioners, in which they represented that the works on the middle section, under the superintendence of Benjamin Wright, Esquire, as principal engineer, had been conducted with great success; and after a report from a committee of the assembly, reciprocating the governor's sentiments on the subject, the act of eighteen hundred and nineteen, "concerning the great western and northern canals," was passed.

This law authorized the commissioners to complete both the eastern and western, as well as the middle section of the Erie Canal, and empowered the commissioners of the canal fund to make the necessary loans.

A law was also passed at this session for constructing a harbour at Buffalo Creek.

Mr. Hart, who signed the report as one of the commissioners, had been appointed in the room of Mr. Ellicott, who had resigned. Afterwards Henry Seymour was appointed to fill his place.

Mr. Canvas White, and Mr. Nathan S. Roberts, who had acted as assistant engineers, the commissioners stated, had evinced so much talent and usefulness, that they had assigned them more important duties.

The report is also interesting on account of its announcing the discovery, near the canal line, of what the commissioners call meagre lime. It is that material which, when made into mortar, indurates under water, and has been so essential to the construction of the hydraulic works of the canals. This important discovery was made by Mr. Canvas White, who has obtained a patent for its use. Nature seems not only to have laid out the path for the great western canal, but to have made the most bountiful provision near it, of all the materials necessary for its construction. The massive stones of which the locks are composed, have been obtained without difficulty, wherever they have been requisite. This water lime has already become an article of commerce within the United States, and is said to be so superior to the Roman cement, and the English limes, that no doubt it will soon be exported.

In the report now adverted to, the commissioners gave a description of several labour-saving machines, employed on the canals; among others, they mentioned a machine for prostrating the forest trees, that grew on the canal lines; another, with which the stumps of trees, that had been cut down, were eradicated; and a third, for cutting up roots. These were all the inventions of our own countrymen, and though they may not seem of sufficient consequence to be mentioned on this occasion, yet these, and other

ingenious machines which were contrived for the occasion, were of very great importance in the completion of these works. Indeed, to see a forest tree, which had withstood the elements till it attained maturity, torn up by its roots, and bending itself to the earth, in obedience to the command of man, is a spectacle that must awaken feelings of gratitude to that Being, who has bestowed on his creatures so much power and wisdom.

At the opening of the session of eighteen hundred and twenty, Governor Clinton had the gratification of announcing, in his speech to the legislature, "that the middle section of the western canal, including a lateral cut to Salina, and comprising a distance of nearly ninety-six miles, had been completed. That on the twenty-third day of the preceding October, the commissioners navigated it from Utica to Rome, and found their most sanguine expectations realized in the celerity, economy, and excellence of its execution. That, on the twenty-fourth day of the previous November, the whole Champlain canal was also in a navigable state. That thus, in less than two years and five months, one hundred and twenty miles of artificial navigation had been finished."

The governor was enabled to say, that these works, in their then unfinished state, had given to our internal trade an animation, which could not be duly appreciated, without the advantages of personal observation.

The report of the canal commissioners was equally satisfactory. It contained very long and minute details of what had been done, as well as views and estimates of the work that remained to be executed.

The report was accompanied by surveys, made by Mr. Thomas, of the harbour at Buffalo. Mr. Thomas submitted propositions which he had received, for harbours at Black Rock, and at some other points near what was supposed would be the termination of the Erie Canal.

At this session, a law was passed allowing the canal commissioners a salary of two thousand dollars a year, but it contained a clause that this provision should only extend to three of the commissioners who should be actually engaged in the superintendence of the works. This was intended to meet the arrangement which the commissioners had previously made as to themselves. Mr. Young, Mr. Seymour, and Mr. Holley, had been active and immediate superintendents of the execution of the canals for which they had received a compensation or salary, while Mr. Clinton and Mr. Van Rensselaer's duties were confined to the meetings of the board. Neither of

these gentlemen have ever taken the least compensation for their services.

Hence arose the designation of acting commissioners, which was applied to Mr. Young, Mr. Seymour, and Mr. Holley, and afterwards to Mr. W. E. Bouck, when he was the next year appointed one of the board. These gentlemen have devoted themselves to the management and superintendence of the works, with a zeal and ability to which the speed, efficacy, and economy with which it has been executed, bears the best evidence. When it is considered that the commissioners and engineers could have had no experience in canalling; that the science they acquired must have been in a great measure the result of mental application, while they were constantly employed in the active and anxious duties of their station, they deserve a commendation to which any thing I could say on this occasion, would be very inadequate.

From the time the navigation to Lake Champlain, and between Rome and Montezuma, was opened, all opposition to the completion of the western canal to Lake Erie and the Hudson ceased, or was very feeble.

Those who had entertained honest doubts as to the practicability of the great work, yielded to this evidence of the feasibility of executing the whole of the original plan. Experiments on so large a scale gave confidence in the estimates which had been made before the work was commenced; these estimates were somewhat exceeded by the actual expenditure, owing to circumstances before noticed, and to some other adventitious causes, which the commissioners, in their report, satisfactorily explained.

The advantages, as well as the profit, of these water communications, were immediately felt. The canal from Champlain, and the middle section of the western canal, were covered with boats the moment they were opened; and although no tolls were taken till July, eighteen hundred and twenty, the amount received in the course of the season, gave earnest of what the canals would produce when they were finished. No doubt was longer entertained but that the resources and credit of the state were competent to furnish all the funds that would be required.

From this time the communications from the executive, and the reports of the commissioners, to the legislature, were details of the uninterrupted and fortunate progress of the great work, and the congratulations on the rapidity with which the period was approaching when the state, and the nation, would be in possession of the incalculable advantages which

must result from the completion of the New York canals.

These communications and reports are documents of the most interesting and useful character. They are important, not only as furnishing a detailed and very circumstantial history of these works, in their daily progress, but as affording minute information, which must be of the greatest use to those who may be engaged in similar enterprises. It would not be consistent with the character of this memoir, to swell it with these details; it is not in a production of this nature that practical information will be sought. The state has established an additional claim as the munificent benefactors of mankind, in authorizing, by a law passed in February, of the present year, a collection and publication of "all the laws, reports, and documents relative to the canals, requisite for a complete official history of those works, with correct maps, delineating the routes of the Erie and Champlain canals, and designating the lands through which they pass."

In compliance with this law, two splendid octavo volumes, with plates and charts, and a large atlas, have just been published. They have been completed under the superintendence of a committee of the legislature; but justice would not be done were it not acknowledged that the state owes, to the indefatigable industry and ability of John Van Ness Yates, Esquire, the secretary of state, this splendid history of works which will be for ever connected with her glory.

While these volumes contain much that mere men of letters will not read, he who seeks for minute information as to the origin and progress of the New York canals, would have been satisfied with no abbreviation of the matter they contain; and the practical engineer, who desires instruction, will find nothing which he will think ought to have been omitted. The routes that have been proposed and abandoned; the plans which have been suggested, or tried and relinquished; the experiments which have been made, and proved unsuccessful, will all have their use, and "The Official History" of these works would have been incomplete had any of these things been unnoticed.

By the first of October, eighteen hundred and twenty-three, the eastern section of the canal was completed. In the mean time the western section had progressed from Montezuma towards Erie, so that when the lock which forms the communication between the canals, and the artificial basin in the Hudson River, at Albany, was opened on the eighth of October, eighteen hundred and twenty-three, there

was a continuous canal navigation from the Genesee River, and from White Hall, at the head of Lake Champlain, to Albany.

Such an auspicious event as the passage of the first boats from the west and the north into the tide waters, was celebrated with some ceremony. Large committees from New York, and from other places on the canal route, attended at Albany. The New York committee was headed by Mr. William Bayard. He had presided at the meeting at which the New York memorial, before mentioned, originated. Mr. James was the chairman of the Albany committee of citizens. These gentlemen had on all occasions given the full weight of their long established and respectable characters in favour of the execution of the canals. When the extent of the proposed artificial water-ways, the hills, and valleys, and rivers, over which they were to pass, were contemplated, and the resources of the state were considered, many thought the plan perfectly visionary. By some, the sincerity of its advocates was doubted; they were suspected of sinister designs, or they were regarded as infatuated enthusiasts; but the countenance of many such men as Mr. Van Rensselaer, Mr. Bayard, and Mr. James, whose age and experience, and rank in society, commanded respect, tended to induce a belief that the project was founded on mature reflection and sober calculation, and to give confidence that, notwithstanding its magnitude and difficulties, it might be accomplished.

The pencil could not do justice to the scene presented on the fine autumnal morning when the Albany lock was first opened. Numerous steam boats and river vessels, splendidly dressed, decorated the beautiful amphitheatre formed by the hills which border the valley of the Hudson, at this place; the river winding its bright stream far from the north, and losing itself in the distance to the south;—the islands it embraced;—the woods, variegated by the approach of winter, a beauty peculiar to our climate;—the wreathed arches, and other embellishments, which had been erected for the occasion, were all objects of admiration. A line of canal boats, with colours flying, bands of music, and crowded with people, were seen coming from the north, and seemed to glide over the level grounds, which hid the waters of the canal for some distance, as if they were moved by enchantment.

The first boat which entered the lock was the De Witt Clinton, having on board Governor Yates, the mayor and corporation of Albany, the canal commissioners and engineers, the committees, and other citizens. Several other boats succeeded. One, (not the



MILITARY SCHOOL, WEST POINT, N.Y.

J. H. M. 1863

least interesting object in the scene,) was filled with ladies. The cap-stone of the lock was laid with masonic ceremonies, by the fraternity, who appeared in great numbers and in grand costume.

The waters of the west, and of the ocean, were then mingled by Doctor Mitchell, who pronounced an epithalamium upon the union of the river and the lakes, after which the lock gates were opened, and the De Witt Clinton majestically sunk upon the bosom of the Hudson.

She was then towed by a long line of barges, past the steam boats and other vessels to a wharf at the upper end of the city, where those gentlemen, who were embarked on board the canal boats, landed and joined a military and civic procession, which was conducted by a large stage, fancifully decorated, erected for the occasion in front of the capitol. Here the canal commissioners received a congratulatory address from Charles E. Dudley, Esquire, Mayor of Albany, which was answered by Mr. Clinton, as president of the board of commissioners. The Albany committee was addressed by Mr. Bayard, which was returned by Mr. James, and the day concluded with a banquet, at which it may be said with as much propriety as it could be said in relation to any other festive board, that there was "the feast of reason and the flow of soul."

The completion of the eastern section was a matter of great gratification to the friends of the canals, indeed it may be said to every citizen, for, at the time we are speaking of, the canals had ceased to have any opponents; but the difficulties which presented themselves on this section, appeared more formidable than any that were to be met with elsewhere on the route. The cataract of the Cohoes was to be surmounted; a path for the canal was to be found along the abrupt rocky shores, rising generally to a great elevation, and in many places divided only by the narrow bed of the Mohawk; the upper falls of that river were to be overcome. To accomplish this, and preserve a due level, it was necessary to carry the canal upon a ledge twenty and thirty feet above the base of perpendicular rocks. The ingenuity of our countrymen found, by what they called sand blasts, means of blowing off such masses of rock, that a road was made for the canals with much less labour than had been anticipated. In eighty days a work was accomplished, which, before it was commenced, it was calculated would require several years. The canal between Schenectady and Albany, twice crosses the Mohawk River in aqueducts of more than eighteen hundred feet in extent.

In speaking of this section, the canal commissioners,

in their report of eighteen hundred and twenty-four say, "none but those who had examined the line previous to the commencement of the work,—who had seen the rude and undulating surface which is traversed,—the rocks which were to be blasted,—the irregular ledges, filled with chasms and fissures, which were to form the basis of a water-tight canal,—the spongy swamps and gravel beds, and quick sands which were to be made impervious to water,—and, in short, the huge masses of rough materials which, with uncommon labour, were to be reduced to symmetry and form, can duly appreciate the efforts which it has required to surmount these serious obstacles."

The canal commissioners do not hesitate to admit, that had this section been commenced originally, while their information as to constructing canals was merely theoretical, probably the attempt to complete it would either have been entirely abortive, or so imperfectly executed, as to have defeated, or perhaps postponed for a century, the accomplishment of the great work of internal improvements.

In the course of the season of eighteen hundred and twenty-three, the Gleaner, and afterwards several other canal boats, from Vermont, arrived in the city of New York, bearing to our market the produce of the forests, the fields, and the mines, of the shores of Lake Champlain.

In November, of the same year, the Sally and Mary, a boat of sixty or seventy tons, from Hector, in Tompkins county, at the head of the Seneca Lake, seventy miles south of the Erie canal, and three hundred and fifty miles from New York, had passed into the canal, by the locks at Waterloo and the Seneca River. She arrived at New York, freighted with the rich productions of the west. So happy an illustration of the advantages of the canals was not suffered to pass unnoticed by our citizens. They gave Messrs. Osborn, and Sealy, two farmers of Tompkins county, who were her owners and navigators, a public entertainment.

This vessel was not only received as the precursor of a commerce, which will be unlimited in its extent and importance, but as an interesting evidence of the ingenuity and enterprise of our countrymen. Her timbers grew near where she was built; her proprietors were her architects; her cargo was the produce of the fields from whence she sprung, and she was navigated by those who cultivated them; her sails and rigging even, were emphatically domestic manufactures, for they were grown, and made, at the homes of her owners.

When we look at a map, and see marked out the

many lakes and sheets of navigable water which occupy the centre of our state, and reflect that every place on their shores is, for all purposes of commerce, converted by the canals into a sea-port, and that the trade of all of them must centre in this metropolis, we may have some idea of the advantages which the city and the country will derive from the opening of these water communications.

The completion of the western section, and of course of the whole Erie canal, was announced to us by the sound of cannon, on the twenty-sixth of last month, and to-morrow we shall witness the arrival of a canal boat, from Buffalo, after an internal navigation of five hundred and thirteen miles; she will have passed three hundred and sixty-three miles on one continued uninterrupted artificial canal, forty feet wide on the surface, twenty-eight at the bottom, with four feet depth of water: she will have passed through eighty-three locks, built of massive stone, the chambers of which are ninety by fifteen feet, capable of containing boats of more than a hundred tons burden; and she will, when she arrives at Albany, have descended five hundred and fifty-five feet; but her ascent and descent in the course of her voyage, will have been six hundred and sixty-two feet.

The great embankment across the Ironduquot, over which the western section of the canal passes, is one of the greatest works on the canals. This aerial water-course extends more than a quarter of a mile, on a mound of earth, seventy feet in height, from a stream, flowing through a culvert, at its base. The passenger looks down from the narrow eminence, on the tops of aged forest trees, rooted in the bottom of the valley. There are works upon the canals, which are, undoubtedly, of a more artificial character, and may appear to some more magnificent, but when the length, and height, and magnitude of this embankment is considered, and when, above the tops of the trees, boats are seen passing on its summit, which is but little wider than is necessary for the canal and towing path, it must excite great admiration.

The aqueduct over the Genesee River, at Rochester, is another magnificent object on this section, which deserves notice. It is a structure of ten arches of hewn stone, extending two hundred and two feet.

The deep cutting towards the western extremity of this section has cost more money, and required more labour, than any other work on the canals. To pass the mountain ridge, there has been a necessity for excavating seven miles, to an average depth of twenty-five feet, three miles of which is through hard rock. The combined locks, at the brow of the moun-

tain, the commissioners describe as a work of the first magnitude on the line, and as one of the greatest of the kind in the world.

Upon the middle section there is an uninterrupted level of sixty-nine miles and a half, from Salina to Frankfort; and on the western section, there is another level from Lockport to Rochester, uninterrupted by any lock, of sixty-three miles. The extraordinary length of these levels, evince the correctness of Mr. Colles' idea, which has been before mentioned, that "the Allegany mountains died away as they approached the Mohawk."

There are very many objects on this western section, as well as on other parts of the canals, which deserve attention, but to notice them, would require details which this occasion will not admit. Those who wish information as to these and other particulars, must refer to the volumes before mentioned, published by authority of the state; or to a volume, published in eighteen hundred and twenty, under the direction of the New York Corresponding Association for the promotion of Internal Improvements. It contains a collection of public documents relating to the canals, up to the time of its publication; but it is now more valuable for an introduction, which was written by the late Mr. Charles G. Haines, one of the association, in whose death the cause of internal improvements lost a very warm, able, and active advocate. In the prime of life, he fell a sacrifice to the ardour and unremitting industry, with which he devoted himself to the acquirement of knowledge, the practice of his profession, and to the promotion of almost every plan that was on foot for the public good. His frame was too slender, and his constitution too weak to bear the excitement of his ardent mind. He died just as he had commenced a career, which, had he lived to pursue it, must have led to eminence; but, though his friends regret that he did not live to reap the fruits of his talents and industry, they more deeply regret that, by his death, they have been deprived of one who had gained all that esteem and respect which genius, acquirements, zeal, industry, honour, and benevolence deserve.

At Albany the canal terminates in a basin, formed from the Hudson, by extending a pier, or mole, into the river, and running it parallel to the shore, nearly three quarters of a mile. The communication with the river is at the southern extremity of the mole, by a sloop lock which admits the passage of river vessels, as well as of canal boats, in and out of the basin. Stores are building on the pier, which is seventy-six feet in width, on the top. From one end of these stores, canal boats in the basin may be laden



or unladen ; and at the other end, sloops in the river may be loaded or discharged.

This spacious harbour, which will have a superficies of about thirty-two acres, has been made by a private company, incorporated for the purpose, by a law of the state. They are permitted to have the benefit of certain tolls, but it is presumed the state has reserved the right to control the corporation, so far as to oblige it to exercise its powers entirely in subservience to the interests of the public.

The Erie Canal, at its western extremity, at present discharges into an artificial basin, made from the Niagara River, at Black Rock, by connecting the main shore with Squaw Island. In the dam from Squaw Island to the main, there is a sloop lock, which communicates with the river below. If the bridge, which has been thrown over the Niagara River, from the main to Goat Island, at the very brink of the Great Falls, by Judge Porter, did not show us what might be done by great boldness, ingenuity, and enterprise, and convince us that works may be constructed in the river, of sufficient strength to resist its current, where it is most impetuous, we might doubt whether it would be possible to make the mole or piers of the Black Rock harbour stable ; if, contrary to predictions, it should stand,—if still water should be produced within the harbour,—and if it should not be injured or obstructed by ice or sands, it cannot be questioned but that it will be of great importance. It will be the more valuable, because without it, there is no harbour in that quarter, except at Buffalo ; to which, if the harbour at Black Rock should not be found to answer, the canal will be continued along the margin of the Niagara River, to join what is considered a part of the Erie Canal, extending from the town of Buffalo to the lake.

The rival interests of Buffalo and Black Rock, have created much excitement as to the termination of the canal to the west. There has been a difference of opinion among the canal commissioners, and among the engineers, as to the plan which ought to be adopted. The legislature seems to have pursued a discreet and impartial course, by reserving the grounds for, and the right to make, the canal along the margin of the Niagara River, if, after the works at Black Rock are completed and tested, the public good requires the canal to be uninterruptedly continued to Buffalo harbour.

To mention all who have been concerned in the immediate execution of these great works, as they deserve, would require a list, which, if an attempt were now made to present it, there is reason to fear would not be perfect. It would also require information

which I do not possess, and which no time is allowed to acquire. All the commissioners have been mentioned ; those who have been designated as the acting commissioners, and who in some measure performed the duties of engineers, as well as of advisers and superintendents, are Mr. Holley, Mr. Young, Mr. Seymour, and Mr. Bouck. The principal engineers are Mr. Wright, Mr. Geddes, Mr. White, and Mr. Thomas. In one of their reports the commissioners say, “in looking back to the numerous difficulties and responsibilities, some of them of an aspect the most disheartening, which surrounded the canals, especially on their commencement, we feel compelled, by common justice, to commend the aid which has, at all times, been afforded by our engineers. In the selection of all the persons who are now employed by us under this character, we have been eminently fortunate. But to the Honourable Benjamin Wright and James Geddes, the state is mostly indebted. Possessing much local information, competent science, long experience in many kinds of business, bearing some analogy to canal operations, and well established characters for industry and fidelity, these gentlemen have rendered the most essential services in all the duties of their department. They were first appointed engineers. They have unceasingly, and with improving fitness, devoted their best faculties to the great cause in which they were engaged ; and they have hitherto been found equal to the high trusts confided to them.”

But no eulogy could do so much justice to the commissioners and engineers as an appeal to their works. It has been said, and it is believed truly, that they have completed, in the shortest time, and at the least expense, the longest uninterrupted canal in the world.

The official reports of the canal commissioners, of the commissioners of the canal fund and the engineers, are calculated to do them infinite credit : but it is impossible to take any particular view of the merits of these documents on this occasion : nor is it now so necessary, as they are before the public in the volumes before mentioned, published by authority of the state.

From the time that the great canal project was brought before the legislature, by Judge Platt, in eighteen hundred and ten, Mr. Clinton has bestowed his time and talents to promote the commencement, progress, and completion of these great works, with an entire devotedness. The constancy with which he met all opposition ;—the extent of the information he communicated,—his encouragement as to the resources and capacity of the state, although she was

left alone to perform so great a work ; the unrivalled eloquence with which, in his speeches to the legislature, as well as in those canal reports which he drew, he appealed to the honour, the pride, and the patriotism of his native state, it must be admitted contributed greatly to the accomplishment of the great works, in celebrating the completion of which all hearts now join.

Many of those who thought the canals impracticable, till a large portion of them were finished, and who supposed that their failure would overwhelm with disgrace all who were connected with their execution, did not hesitate to charge Mr. Clinton with being answerable for engaging the state in so great and so expensive an undertaking. Surely they who would have censured him so severely if the canals had failed, will not, in justice, refuse to give him due credit now that they have succeeded.

His exertions were not confined to his official duties, as president of the board of canal commissioners, and as governor ; his able pen was constantly employed in promoting an enterprise which, as he said, was identified not only with the prosperity, happiness, and honour, of his own state, but with that of his country. He had so large a share in the accomplishment of these great works, that his name will always be intimately connected with them, and will not be forgotten while they endure.

The history of the canals is one of the proudest monuments that the present age will transmit to posterity : but now, when the agitations of the times are past, when no passion is mixed with our feelings, there is one page which many will wish blotted out. It is that which records the legislative vote by which Mr. Clinton, on the last day of the session, of the year eighteen hundred and twenty-four, when the canals were on the point of being finished, was removed as a canal commissioner.

But these great canals will not be regarded as the work of individuals. They will be attributed to the state of New York ; every citizen deserves a share of the credit connected with them. In the language of the commissioners it will be said, " their labours could not have been perfected without the support of a wise foresight, and just liberality, in several successive legislatures. To us, it appears, that these legislatures have afforded a spectacle, most animating, encouraging, and delightful, in reference to the sagacity of the people to understand, and their wisdom to provide for their most substantial interests. They exhibit the most impressive example which the United States have yet produced, since the adoption of the Federal Constitution, of the beneficent effects of a free government, upon the character of a community. They

are intimately connected with the best hopes of the republic. Rising above all fugitive and partial interests, and with a full detail of the costs of these works before them, the immediate representatives of the people have so clearly discerned the benefits which they would introduce, as to apply to them from year to year a greater portion of their funds than was sufficient to defray the expenses of the state government."

The well-meaning opposition which the canals for a certain time encountered, as well in as out of the legislature, was not without its good effects. It induced a circumspection, economy, and system of rigid accountability, which might not have been observed, if all had been as unanimously and zealously in favour of canals, as they are at the present moment.

It has been said, in this memoir, that the Erie Canal is the longest in the world. It is believed that it is so ; but it must be recollected that we speak of it as one continuous uninterrupted artificial canal, for upwards of three hundred and sixty miles.

As has been mentioned, England has more than a hundred canals ; but she has no one, which, independent of branches, extends a hundred miles.

The largest canal in France is the Canal of Languedoc, which is one hundred and fifteen miles.

The inland navigation of Russia is so extensive, that it is said to be possible to convey goods by water near four thousand five hundred miles, but this is by using her lakes, and natural water-courses, which are connected by canals, no one of which is more than half as long as the Erie canal.

Besides innumerable canals spread over the whole surface of China, she has an inland navigation, extending from Canton to Peking, a distance of eight hundred and twenty-five miles, but this navigation is not formed by an uninterrupted canal. On the contrary, the artificial works are connected by lakes and natural water-courses. But it is extraordinary that the Chinese do not use locks, at least not generally. They pass from one level to another by means of sluices. This renders the descent dangerous, and the ascent so difficult and laborious, that it requires the united exertions of many men to drag a vessel from a lower to a higher level.

But if we consider the extent of the internal navigation which is opened by the formation of the New York canals, we shall find it greatly beyond that which any other country in the world affords. Within our own state we have a navigation into the minor lakes, and upon several navigable streams, that can not be less than a thousand miles.

From the embouchure of the canal at Lake Erie, to the head of Lake Superior, is more than one thou-

sand miles, but with slight interruption the water communications extend to the Arctic Sea.

Had Captain Franklin, and his party, who are now exploring these regions for a north-west passage, commenced his expedition, so as to have arrived here a few months later than he did, he would have found that he could have been transported from London five thousand miles towards his destination, without being obliged to set his foot on land.

By the Erie canal, and the Oswego River, there is a communication with the Lower Saint Lawrence, and thus an inland navigation is opened through the whole extent of that river, which, added to the lakes, gives a line of navigable waters extending not less than two thousand miles.

The lake coast, including Lake Michigan and Green Bay, extends nearly four thousand miles, besides there are many navigable rivers falling into the lakes and the Saint Lawrence, with which a perfect water communication from the city of New York is formed by opening the Erie and Champlain canals.

It is curious to observe, that by these artificial water-ways, the continent of America will be divided into great islands.

One, bounded by the Champlain Canal, the Sorel, the Saint Lawrence, the Atlantic, and the Hudson. Another, by the Champlain Canal, Lake Champlain, the Sorel, the Saint Lawrence, Ontario, the Niagara, Lake Erie, and the western canal. And a third, is bounded by the Hudson, the Erie Canal, the lakes, the water communication which exists between them at certain seasons, and the waters of the Mississippi, the Mississippi, the Gulf of Mexico, and the Atlantic. A canal, of not more than one mile and three quarters, between the Wisconsin, which falls into the Mississippi, and the Fox River, which empties into Lake Michigan, streams that are now constantly navigated, will form another immense island, that will have Lake Superior for its northern, and the Mississippi for its western boundary.

Indeed, every canal that may be opened, and make a communication between the waters of the lakes, and of the Mississippi, will form a new subdivision of the continent into islands, with the immeasurable shores of which the city of New York may have commercial intercourse, with more certainty, facility, and advantage, than if they were washed by the sea.

But, supposing no other communication to be completed than that with the Mississippi, which will be formed by the canal that Ohio is now executing, we shall then have a perfect line of internal navigation, from the city of New York, by the Hudson, the Erie

Canal, Lake Erie, the Ohio Canal, the Ohio, Mississippi, Missouri, and Jefferson Rivers, to the foot of the Rocky Mountains, a distance of nearly five thousand miles; and with less interruption than there is in the great China canals. By Lewis River and the Oregon, we shall have an internal navigation from the Atlantic to the Pacific.

From Astoria at the mouth of the Oregon, to China, would, in a steamboat, on the Pacific Ocean, be a passage of some fifteen or twenty days. And thus, will be formed a northwest passage to India, for which Hudson was searching when he discovered the river which bears his name.

It is possible that the route above indicated may be that which will hereafter be pursued by travellers between the western shores of the European and the eastern shores of the Asiatic continents. New York, Albany, Utica, Buffalo, Cleveland, and St. Louis, may become post towns on the common high road to India. This route would hardly be half as long as that which is now pursued by sea; and though a journey to China, through our canals, lakes, and rivers, and over the North Pacific, would be longer than the route over the European and Asiatic continents, yet the former could be accomplished with much the greater ease. A person embarking on the Thames, by pursuing always a westerly course, with some deviations to follow the sinuosities of the rivers and canals, might arrive at China, without setting his foot on land, except to cross the Rocky Mountains, over which we shall in time, if a canal be impracticable, have a turnpike road.

The principal navigable rivers, west of the Alleghany Mountains, which are tributary to the Ohio, Mississippi, and Missouri, with which, (supposing the Ohio canal to be opened,) we shall have an internal water communication, extend more than six thousand miles; and thus, if we take the northern rivers, the shores of the lakes, the Ohio, the Mississippi, the Missouri, and the other principal tributary rivers above mentioned, we shall have an internal navigation, connected with the city of New York, by the canals of this state, of more than fifteen thousand miles. If we take into the account the innumerable minor navigable streams, which are branches of the great water-courses above enumerated, and the rivers discharging themselves into the Gulf of Mexico, independently of the Mississippi, such as the Apalachicola, the Alabama, the Tombecbee, Pearl River, and others, the estimate made, by the assembly, in their answer to the governor's speech, in eighteen hundred and eighteen, that the internal navigation which would be connected with the Hudson, by the

canals, would amount to forty or fifty thousand miles, will not appear exaggerated.

The canals of New York and Ohio will make a change in the course of waters on the American continent, which it could hardly have been believed the power of man could have effected. From the summit level of the Champlain Canal, waters, which used to find their way to the Atlantic through the Hudson, will be turned back, and will now mix with the sea in the Straits of Belleisle. Streams on the summit level of the Ohio Canal, which now swell the cataract of Niagara, will be conducted to the Gulf of Mexico, by the channels of the great river.

When we consider that the immense regions surrounding the lakes, and bounded by the great rivers, water-courses, and canals, to which we have adverted, are all within the temperate zone,—that they are all capable of sustaining man;—that they are populating with astonishing rapidity,—that the greatest part of the soil is fruitful, and much of it as rich and productive as any on earth, we must be impressed with ideas of the importance of the great works we have accomplished.

Though New York can not expect to attract more than a part of the commerce of these vast countries, yet till other communications are opened between the west and the east, a large portion of it will be drawn to her great market. New channels may divert some of the trade of the west from New York, but her position on the confines of the sea, at a point nearer to the lakes than any other on the whole American coast;—her beautiful, spacious, and secure harbour,—her constantly uninterrupted navigation to the ocean,—and her healthful climate, are advantages which are combined at no other spot in the United States. New York must largely share in the fur trade of the north, for which so much human blood has been shed. The water communications between Hudson's Bay and the Mississippi, and Lake Superior, are almost perfect. The inhabitants of the shores of all the great lakes will find their natural market at the mouth of the Hudson: the upper Mississippi, the Ohio, and all their tributary streams, will send produce, and receive returns from this mercantile emporium. When the boundless regions of the Missouri are populated, and the fruits of their cultivation are deposited at St. Louis, there are many circumstances which will induce a transportation of a part of them, at least, to this metropolis, through the Ohio and New York canals.

Although all these anticipations should not be realized, yet we may be sure that, before the close of

the present century, New York, which, at the conclusion of the revolutionary war, contained less than twenty-five thousand inhabitants, and now has one hundred and seventy thousand, will be one of the greatest commercial cities in the world.

I am aware that these estimates of the effects of our canals will appear to be exaggerated or enthusiastic. Possibly they may be so. The occasion does not require accurate measurements and precise calculations of distances. If there be error in any of those which have been presented, they may be corrected by reference to a map of the United States, from a view of which they are made. As to the future advantages of the water communications, the opening of which we are about to celebrate, we may be permitted to mix our hopes and wishes and the feelings of the moment with our speculations. Were this a work that would ever be resorted to for practical information, it would be necessary to employ time, not now allowed, for mature reflection, and it would be proper to subdue the excitement which success in so great an enterprise must, for a time, create in any breast not preternaturally cold.

It has been said that we Americans, not content with the consideration to which our actual condition entitles us, indulge a boastful disposition in anticipations of future greatness. If this be so, it is at least as pardonable as the weakness of those who pride themselves on the greatness of their ancestors. Our former predictions, however extravagant they may have appeared, have been more than realized. Around us every object is new, youthful, and vigorous: it is natural that we should indulge and express hopes of continued prosperity, and of a rich and powerful maturity. Did we live amidst ruins, which mark former greatness;—were we always presented with scenes indicating present decay, and foreboding constant deterioration, we might be as little inclined as others, to look forward. But we delight in the promised sunshine of the future, and leave those who are conscious that they have passed their grand climacteric, to console themselves with the splendour of the past.

After the views we have taken of the advantages which will result from the canals, it seems almost unnecessary to descend to estimates of their costs, and of what will be their money produce to the treasury of the state. But something on this topic will be expected.

The canals not having been completed when the commissioners made their last report, there are not now documents before the public which will show precisely what has been the cost of these works.

There are, however, data which enable us to ascertain the amount very nearly.

In the annual report of the commissioners of the canal fund, made in eighteen hundred and twenty-five, they state that all the moneys paid for the canals, up to the first of January, of that year, after deducting the tolls received, amounted to eight millions eight hundred and twenty-nine thousand and fifty dollars. We find that the tolls received to the last mentioned date amounted to four hundred and ninety-one thousand four hundred and fifteen dollars; and, according to the last report of the canal commissioners, it then required to complete the canals, and to satisfy all claims for damages, eight hundred thousand dollars. These sums added together amount to ten millions one hundred and twenty thousand four hundred and sixty-five dollars, which may be taken as the whole amount which has been disbursed on account of the canals.

The Erie canal is three hundred and sixty-three miles in length, and on the Champlain route there are eighteen miles of canal. The extent, therefore, of canalling is three hundred and eighty-one miles, which gives an average of twenty-six thousand two hundred and forty-one dollars a mile.

But there are, connected with the Champlain canal, forty-six miles of improved navigation in the Hudson, and in Wood Creek. The expense of these improvements has been very great: so that, in estimating the cost of the canals per mile, these forty-six miles ought to be taken into the calculation. This makes the whole length four hundred and twenty-seven miles, and the cost, per mile, twenty-three thousand four hundred and twenty dollars.

But, it must be recollected, that when the question is, how much the canals have actually cost the state, they must have credit for the amount of the tolls they have yielded.

The last mentioned report of the canal commissioners states, that from the opening of the navigation in the spring of eighteen hundred and twenty-four, till it was closed by the winter, late in December, of the same year, although only two hundred and eighty miles of the Erie Canal were navigable, and "although the regions west of Buffalo, had hardly begun to pay their contribution to the western canal," amounted to three hundred and fifty thousand, seven hundred and sixty-one dollars. The commissioners calculate that the tolls for the present year, will amount to five hundred thousand dollars; and that for the nine years succeeding January eighteen hundred and twenty-six, they will increase at an average of seventy-five thousand dollars a year.

That the tolls, with the revenue pledged by the constitution of the state, adopted in eighteen hundred and twenty-two, to the canal fund, till the canal debt be extinguished, will in ten years, besides meeting all necessary expenses for repairs and superintendence pay off the whole of the canal debt which, it is estimated, will on the first of January next, when the canals will be entirely completed, amount to seven millions six hundred and ninety-three thousand seven hundred dollars; and will, at the expiration of the period last mentioned, leave the state in the receipt of a clear, unincumbered revenue, from the canal fund, of more than a million and a half of dollars.

But when the canal debt is paid, the salt tax, and the state duties on sales at auction may be, and the former probably will be, repealed. The steam-boat tax, it is presumed, can not, or will not, be collected. If, then, we deduct, after January, eighteen hundred and thirty-six, from the proceeds of the canal fund, four hundred and twenty-five thousand dollars, for these objects (they now amount only to three hundred and fifty thousand dollars,) and make a further deduction of one hundred thousand dollars for repairs, collection, and superintendence; the state will then have a net revenue, arising from the canals, free of all charges, of one million of dollars, which is more than equal to four times the ordinary annual expenses of her government.

So that if the expectations of the canal commissioners, as to the tolls, be realized, and the financial scheme they have proposed, or any other as effectual be adopted, and firmly and faithfully pursued, this state will, after the expiration of ten years, exhibit to the world the novel spectacle of a community of between two and three millions of people, (for our population will be at least as extensive in ten years,) not only maintaining their government without taxes, but deriving a large surplus revenue from property of the state.

We shall, it is true, be still liable to pay the imposts which the general government, may think proper to impose, on such foreign goods as we may choose to consume; but the independent farmer, who raises on his own lands, and manufactures all that he eats, drinks, wears, and uses, may live, without paying to the state or to the national government, any kind of tax, either direct or indirect.

It is worthy of remark, that in the eight years, during which the state of New York has been expending between nine and ten millions in the construction of her canals, there have been collected, for duties of impost and tonnage, at the custom-house

in the city of New York, and paid into the treasury of the United States, more than sixty-four millions of dollars; besides other moneys collected at the custom-houses of the United States in other parts of the state, the amount of which there is now no opportunity to ascertain.

Within the period just mentioned, more than nine millions of dollars have been raised in the state, and applied to the support of common schools; besides, very large sums have been bestowed on colleges, and for the promotion of science and literature.

The commissioners say, that their calculations, as to the receipt of tolls for the time to come, have been estimated so much within the probable proceeds, that they presume no contingency can take place, which will reduce the aggregate amount of the canal fund, at the end of ten years, below the sum specified. There is the more confidence due to their estimates, because, it is certainly true, as they remark, that hitherto their anticipations, in reference to the receipt of tolls, have uniformly fallen short of the reality. They add, that they have no doubt but that the same fate awaits the calculations which are presented in the report to which we now refer, and they express a confidence that the canal tolls are destined to a much more rapid increase than the commissioners have made the basis of their calculations as to the extinguishment of the debt. They suppose, that there is now within the sphere of the operation of the Erie canal alone, a population of one million of inhabitants; and that that population will continue to increase at a ratio, which will double it in ten years; that the tolls will be annually augmented in proportion to the increase of the population. Then, in the year eighteen hundred and forty-six, the Erie canal will, of itself, produce a revenue of two millions of dollars; and in the year eighteen hundred and fifty-six, four millions of dollars.

The anticipations of the canal commissioners, as to the time in which the canal debt may be paid off, are supported by the report of the commissioners of the canal fund, and by a report of a joint committee of the senate and assembly on canals, to which the reports of both these boards were referred.

The committee, in their report, say, "that the productiveness of the canals is established, and the income derivable from them far beyond the anticipations of the most sanguine. The canals will pay for themselves, as the committee believe, in a shorter period of time than estimated by the commissioners of the canal fund, in their highly interesting and valuable report made to the legislature, at the present session."

What will be the augmentation of revenue from the Erie canal, now that it is entirely opened, and becomes the high road for the commerce of the shores of the Lakes, and of the rivers of the north and west, it is impossible to predict.

Hitherto, persons using the western canal have been almost entirely inhabitants of our own state, living near it. But, no doubt, as the commissioners say, the time will arrive, within fifty years, when the number of the people of this state, who will use the canal, will form but an inconsiderable fraction of the whole number whose property will float upon it; when nine tenths of the produce and merchandise transported upon the western canal, will pay toll for the whole length of the line.

It seems certain that, in a short time, the receipts of toll will be limited by nothing but the capacity of the canals to admit the passage of boats. Ten thousand boats passed at the junction locks the last season, which is at the rate of about forty a day, for two hundred and fifty days, during which time we may calculate that the canal, in ordinary seasons, will be free from ice.

One hundred and twenty boats are probably as many as can be passed through the locks in twenty-four hours. Though a single boat may be passed in less than twelve minutes, yet there would be so many circumstances to create delay, when boats come to be continually passing, night and day, that ten or twelve minutes is as little as should be allowed for the passage of each boat.

In the course of a few years after the Ohio canal is opened, more boats will be struggling for a passage than can get through without great delay. Double locks, at least at the junction, and a canal on the north side of the Mohawk river, which is already in contemplation, must be made.

These anticipations, as to the condition of the state, in eighteen hundred and thirty-six,—in regard to the debt,—and as to the revenue the canals will produce, are founded on the supposition that no new debts are created for similar or other purposes.

The faith of the state as to the revenue pledged by the constitution to the canal fund, and as to the tolls of the canals now completed, should, and no doubt will, be held sacred to the extinguishment of the debt created for the construction of these canals; but it does not follow that the large surplus revenue the state will receive, after the present canal debt is paid, may not be regarded as the basis of a new credit, on which to raise moneys to be applied to further internal improvements, which, though they may not yield as large a revenue as the existing canals, will be of great

advantage to large portions of our population, who, till other communications be opened, will feel no other benefit from what has been done, than that they share in the general prosperity.

It is the duty of a government to distribute its favours as equally as possible. Canals should be made "to pass through every vale, and wind round every hill," if it can be done with a due regard to the present and future resources of the state.

No maxim in political economy is so dangerous as that a public debt is a public blessing. When we reflect that the debts of the European governments, which doom most of them to an eternal bankruptcy, have been created to support wars, that determined nothing but who should be the people's masters, and impose upon them new burdens, it is not wonderful that such a precept should be odious. It could only have been adopted where governments require other support than the affections of their subjects.

But, if it would not be as pernicious, it would, at least, be unwise and unjust to maintain that government should contract no debt, however beneficial the object may be for the present, or in relation to the future.

Had this state been, and were she always to be, governed by such a determination, the great works from which we, and our most remote descendants will derive such incalculable advantages, would not have been, and could never be, executed. In truth, there seems no reason of policy or justice that ought to restrain a government from referring to posterity the payment of some portion of a debt, created more for their benefit than for that of the existing generation; particularly when those of future times will have augmented means, arising not only from the object itself, for which the debt was incurred, but from increased population. For example: to pay the canal debt, at this moment, would require from each citizen of the state, about five dollars. Supposing our population to double, in eighteen years, it would require, from each citizen, a contribution of only two dollars and a half, to pay the debt at the expiration of that time. This is supposing that the canals will yield only enough to pay the interest of the money borrowed on their account. But we have seen that they will do a great deal more.

These reflections are not made so much in reference to the canals already completed, as with a view to the great number of internal improvements which we see, by the public papers, are contemplated.

We have yet to consider the canals in more interesting and important relations. They are intimately connected with our social and political institutions.

The important act of eighteen hundred and seventeen, which established the canal fund, constituted a board of commissioners to manage it, and authorized the canal commissioners to commence the canals, is prefaced by a declaration of the legislature, which is an evidence that they did not engage in these important works, without correct and enlarged views of the advantages that would result from their completion. In the preamble to the above mentioned act, it is said that "navigable communications between lakes Erie and Champlain, by means of canals connected with the Hudson, will promote agriculture and commerce, mitigate the calamities of war, and enhance the blessings of peace,—consolidate the union, advance the prosperity and elevate the character of the United States."

Already have these anticipations been realized. The money spent in the construction of the canals has enriched the inhabitants of the great portions of the state through which they pass.

But their permanent influence on agriculture is much more important. The difference between what would have been the price of transporting a ton of wheat to the New York market before the canals were made and what it now costs, all goes to the profit of the agriculturist. The farmer of Le Roy, in Genesee county, who, in eighteen hundred and nineteen, sold his wheat at thirty cents a bushel, now obtains a dollar, there, for the same quantity.

There are, too, many products of the soil, which, unless they can be cheaply transported, are of no value; but now, that the canals are open, the distance from market may be almost computed by the distance from the canal, or the distance from the water communications with it: so that the farmer at Cleveland, or Detroit, as to all beneficial purposes, is as near to the city of New York as an inhabitant of Otsego county was four years ago.

It is for this reason that farms near the canal lines have not as yet increased in price, as it was expected they would do. Owners of these lands have been selling them for less than it was thought they would at this time have commanded, because they found that for what they could obtain for an acre on the canal, they could purchase five or six acres equally good in Ohio, the Michigan territory, or further west; and that the price at home of the produce of the one, would be nearly equal to the price of the produce of the other, because the difference of the cost of transportation to market would be inconsiderable.

There is no fact that can more forcibly illustrate the advantages of canal navigation to the agriculture of a country, than that which is related of the effects

of the canals in Ireland, although they are on so limited a scale. To ensure a competent supply of corn for the consumption of the city of Dublin, the government paid, before the inland navigation to that city was opened, a bounty of one hundred thousand pounds Irish, for the transportation of corn to that capital; "but, in place of this being the case, that city has now become one of the first corn ports of Europe; and Ireland, in general, which half a century ago imported corn to half a million per annum, has now a surplus produce in that article to the value of four millions of pounds sterling per annum."

The author of the article on inland navigation, in the *Edinburgh Encyclopædia*, seems to impute this astonishing change in the condition of Ireland, to the improvement of her internal water communications. Possibly it is owing to the same cause that Ireland has of late been able to supply us with cargoes of potatoes. Probably we shall soon have it in our power to return the favour by sending her some from the county of Niagara or Green Bay. A cargo of bricks for building, from Antwerp, which is now landing on our wharves, we hope is among the last that will be brought to us across the Atlantic. Our supply of this article will undoubtedly be increased from the canal countries, where, on account of the abundance of fuel, it can be manufactured at, comparatively, little cost. Besides, the use of bricks will, in some measure, be superseded by marble, of which there are such quantities and varieties on the canals, and of which, already, so many private as well as public buildings are erected in our city.

As an additional evidence of the advantages that canals will be to agriculture, and at the same time to show that their produce will be beyond any thing that was anticipated in their origin, because they will be used for purposes not then contemplated, the commissioners mention, in one of their reports, that leached ashes, for manure, were transported from Fort Edward, on the Champlain Canal, to Long Island. The distance is near two hundred miles.

As a further evidence that the Canals are used for purposes which, it is probable, never entered the minds of their projectors, it may be mentioned here, though somewhat out of the course we were pursuing, that there are floating stores and taverns on the Erie Canal. Among other things the traveller will unexpectedly meet, are a book store and circulating library, and a museum of living, as well as of inanimate natural curiosities. These floating establishments remove from place to place on the canal, as the owners think may be most to their advantage.

The public papers apprise us, that there will arrive to-morrow, with the first canal boat, a vessel called Noah's Ark, from the yet unbuilt city of Ararat, which is to arise on an island, near the western termination of the canal. She will bring, it is said, to our metropolis, to gratify the curiosity of its inhabitants, specimens of all manner of living things, to be found in the forests that surround the falls of Niagara.

The canals have been more used, by travellers, than was anticipated. There are upon the western canal, a great number of boats, elegantly fitted up which are entirely employed in carrying passengers. They travel at the rate of four miles an hour, a speed which the law, to prevent injury to the banks of the canals, does not allow them to exceed.

The fare is four cents a mile, for which excellent provisions and comfortable lodgings are provided on board the boats. The price of a passage from New York to Albany one hundred and fifty miles, in the best steam packet is four dollars: in other steam-boats it is less, and in the steam tow-boats, as low as one dollar. So that a person may travel from New York to Buffalo, with the utmost comfort, and without fatigue, for about eighteen dollars. Indeed, for much less, if he chooses to take the inferior steam-boats on the river, and the freight boats, on the canal, which carry passengers at a lower rate than the passage boats. This journey, of five hundred and thirteen miles, may be accomplished, by steam-boats and canal boats, in six days.

Great complaints are made of the lowness of the bridges which cross the canal, and which, to accommodate the inhabitants whose farms are frequently divided by it, are very numerous, and oblige passengers to leave the deck as often as they occur. But, it must be recollected, that the object of these canals was not to accommodate passengers: they were not necessary for this purpose, when we have turnpike roads over which a person may travel, with much greater speed, than can be permitted on the canals. They were intended for the transportation of produce and merchandise. The bridges could not be made higher without much further expense, and great inconvenience to the farmers, for whose accommodation they were designed. On the other hand, bridges, not permanent, would subject the boats to great interruption and delay. When the canals are as much occupied by freight boats as unquestionably they will be in a very short time, they must be abandoned by all travellers, except those of mere curiosity. The interruptions in passing the locks, when the canals are full of boats, will be so great, that those

who wish to travel with any expedition, will prefer another mode of conveyance.

The inexhaustible sources of living waters, from which the canals are supplied, afford, in almost every part of their lines, a surplus, which, wherever they are raised above the level of the country, can be applied to move machinery. The privilege of using this water power is leased or sold by the state, and so will materially augment the revenue from the canals. But this is an inferior consideration compared to the advantages which agriculturists and manufacturers must derive from being furnished with these means of moving their mills and machinery. Manufacturing establishments, of great importance, are starting up throughout the extent of the canals.

There are some manufactures which the traveller may observe near the canals, which, though apparently of no great consequence, yet are so new and ingenious, as not to be undeserving of notice.

The city of New York, and indeed most parts of the state, are now supplied with pails and tubs, and wooden ware of that description, made by turning lathes, and other machinery moved by water. In our neighbouring county of West Chester, there are fields, enclosed by fences curiously put together, in panels, on the borders of our artificial rivers, and, after being transported several hundred miles, were purchased for much less than any other fence, equally good, could be made for, near where they are used.

Those who apprehended that the canals would be injurious to the farmers living near the city, and making no use of them, and who supposed that the value of the produce of the southern counties would be depreciated by supplies which would, by means of the canals, be brought cheaply to the market from a distance, find that their fears, in these respects, were groundless. The increase of the population of the city, keeps pace with the increase of supplies. There is already another New York grown up from that which existed before the canals were commenced, and the demand for the provisions of the southern farmers is as great as it was when they had the monopoly of the market. At the same time the money they receive is increased in value by the diminution of the price of labour and of commodities. The wives and daughters of Delaware county, will sell their butter and cheese for as much as they could have obtained if there were no canals, and will buy American cottons, their ribands, and gowns, at a less price; while their husbands and fathers will find the expenses of cultivation diminished.

The vast quarries of marble, and beds of gypsum, —the inexhaustible mines of iron ore, and the im-

measurable forests, which are contiguous to the canals, indicate how advantageous they would be, even if their effects were confined to our own state: but when we see the connexions they will form with boundless fields producing raw materials, and with markets, the human mind is hardly capable of comprehending the extent to which they will promote agriculture, manufactures, and commerce.

We see with astonishment, the progress already made in populating regions which only yesterday, i may be said, were uninhabited. Already the whole canal line is occupied. Almost at every turn in its course the traveller will find a village presented to his view, about which every thing indicates, by the newness of its appearance, that it is but the growth of a few months. He will frequently see, on the borders of the canal, a large excavation for a basin, intended for the port of a town, which he will perceive by the scale on which the streets are laid out, by the preparations for public buildings, and private stores and warehouses, is considered as the foundation of a great city, the founders of which may fancy that they, or their posterity, will date "ab urbi condita," though the site is still overshadowed by the forests, which there has not been time to clear from the back grounds. It is indeed curious to observe, in some places, houses of no mean appearance, erecting and marking the lines of spacious streets, from which the stumps of the trees, on which the timber employed in the buildings may have grown, are not eradicated.

The founders of each of these nascent cities, anticipate that the spot they have selected, has advantages which will ensure it a growth and prosperity equal to other places whose origin is similar: Utica, Rochester, and Buffalo, now of importance, and commanding a great trade, were but a few years ago as new as any of those which are starting with a hope to rival the elder offspring of the canals.

The effects that facilitating communications will have on the social habits and feelings of our citizens, is not one of the least advantages we shall derive from these works. Formerly the inhabitants of our seaboard, and of our northern and western territory, were almost strangers to each other. We thought and spoke of the borders of the lakes as of some distant territory, a journey to which was not so often made as a voyage across the Atlantic. But the great commercial relations, which at present exist between every part of the state, oblige our citizens to have frequent personal intercourse; and, out of this, grow kindly sentiments, that never can exist between those

who have no common interest, and have no intimacy. Now, a citizen of New York thinks much less of a journey to Buffalo, than he did formerly of going to Albany; and persons who never would have known each other, daily mix in our familiar circles, with mutual good feelings.

All the great and wise men who have been concerned in projecting and executing these works, and others, of a similar nature, have made the important effects, which the improvement of the means of internal intercourse would have on our political institutions, a theme of their writings. We have seen with what zeal Washington devoted himself to forming water communications between the west and the south, with a view to their political effects:—the territory we now possess, extending from the Atlantic to the Pacific: from Key West to the Saint Croix, more than twenty-six degrees of latitude, and embracing two millions of square miles, could not have been retained under one government, if we had no other means of water communication than existed twenty years ago. Natural barriers must have divided us into as many distinct governments, as there would have been distinct interests. Why should the trans-Allegany states have remained united with those on the Atlantic, when the mountains rendered all profitable intercourse between them impracticable? Nay! the different sections of our own state were becoming estranged from each other: we may all remember when a division of this state was the subject of familiar conversation. The Saint Lawrence was the high road to the only market the inhabitants of our western territory could reach; and Montreal, if not under her present form of government, under some other, would soon have been to them, what New York now is.

But the establishment of steam navigation, and the opening of canals, have not only consolidated the interests of our own state, but indissolubly united every part of the union. It is impossible to dwell on this part of the subject, without repeating language which has been used by those who have been the advocates of the canals. Governor Clinton, in his speech, at the opening of the session, in eighteen hundred and nineteen, presents the subject to the legislature in the following eloquent words. "In the United States our liberty and our union are inseparably connected; a dismemberment of the republic into separate confederacies would necessarily produce the jealous circumspection, and hostile preparations, of bordering states: large standing armies would be immediately raised,—increasing and vindictive wars would follow,—and a military despotism

would reign triumphant on the ruins of civil liberty; a dissolution of the union may, therefore, be considered as the natural death of our free government, and to avert this awful calamity, all local prejudices and geographical distinctions should be discarded. The people should be habituated to frequent intercourse and beneficial intercommunication, and the whole republic ought to be bound together by the golden ties of commerce, and the adamant chains of interest.

"When the western canal is finished, and a communication is formed between Lake Michigan and Illinois River, or between the Ohio and the waters of Lake Erie, the greater part of the United States will form one vast island, susceptible of circumnavigation, to the extent of many thousand miles. The most distant parts of the confederacy will then be in a state of approximation, and the distinction of eastern and western, and southern and northern interests, will be entirely prostrated. To be instrumental in producing so much good, by increasing the stock of human happiness—by establishing the perpetuity of free government,—and by extending the empire of improvement, of knowledge, of refinement, and of religion, is an ambition worthy of a free people. The most exalted reputation is that which arises from the dispensation of happiness to our fellow-creatures; and that conduct is most acceptable to God, which is most beneficial to man. Character is as important to states, as to individuals, and the glory of a republic, founded on the promotion of the general good, is the common property of all its citizens."

Among those who have written on this subject, no one appears more clearly to have seen, or more forcibly to have urged the advantages of navigable communications in relation to our government and union, than the late Robert Fulton.

When Mr. Gallatin was about forming the report before mentioned, which he made to congress, in eighteen hundred and eight, he addressed one of the circulars, by which he sought information, to Mr. Fulton, who, after having enumerated, in his answer, the economical advantages of roads and canals, says, "numerous have been the speculations on the duration of our union, and intrigues have been practised to sever the western from the eastern states. The opinion endeavoured to be inculcated was, that the inhabitants beyond the mountains were cut off from the market of the Atlantic states; that, consequently, they had a separate interest, and should use their resources to open a communication of their own; that remote from the seat of government, they could not enjoy their portion of advantages arising from the

union, and that sooner or later they must separate, and govern for themselves.

"Others, by drawing their examples from European governments, and the monarchies which have grown out of the feudal habits of nations of warriors, whose minds were bent to the absolute power of the few, and the servile obedience of the many, have conceived these states of too great an extent to continue united under a republican form of government; and that the time is not distant when they will divide into little kingdoms, retrograding from common sense to ignorance, adopting all the follies and barbarities which are every day practised in the kingdoms and petty states of Europe.

"But those who have reasoned in this way, have not reflected that men are the creatures of habit, and that their habits, as well as their interests, may be so combined as to make it impossible to separate them without falling back into a state of barbarism.

"Although, in ancient times, some specks of civilization have been effaced by hordes of uncultivated men, yet it is remarkable, that since the invention of printing and the general diffusion of knowledge, no nation has retrograded in science or improvements; nor is it reasonable to suppose that the Americans, who have as much, if not more information in general, than any other people, will ever abandon an advantage which they have once gained.

"England, which was at one time seven petty kingdoms, has by long habit been united into one. Scotland, by succession, became united to England, and is now bound to her by habit, by turnpike roads, canals, and reciprocal interests.

"In like manner, all the counties of England, or departments of France are bound to each other; and when the United States shall be bound together by canals, by cheap and easy access to a market in all directions, by a sense of mutual interests arising from mutual intercourse and mingled commerce, it will be no more possible to split them into independent and separate governments, each lining its frontiers with fortifications and troops, to shackle their own exports and imports to and from the neighbouring states, than it is now possible for the government of England to divide, and form again into seven kingdoms. But it is necessary to bind the states together by the people's interests, one of which is to enable every man to sell the produce of his labour at the best market, and purchase at the cheapest. This accords with the idea of Hume, 'that the government of a wise people would be little more than a system of civil police: for the best interest of man is industry and a free ex-

change of the produce of his labour, for the things which he may require.

"On this humane principle, what stronger bonds of union can be invented, than those which enable each individual to transport the produce of his industry, twelve hundred miles, for sixty cents the hundred weight? Here, then, is a certain method of securing the union of the states, and of rendering it as lasting as the continent we inhabit."

At the conclusion of a work on canals, which Mr. Fulton published in England, in seventeen hundred and ninety-six, he subjoins a letter addressed by him, at that time, to the governor of Pennsylvania, (Thomas Mifflin, Esq.) in which he urges that state to open canal communications from the lakes to the Atlantic waters. In this, he says, "I hope I shall see the time when canals will pass through every vale, wind round each hill, and bind the whole country together in bonds of social intercourse."

Had this philanthropic, patriotic, and enlightened citizen been spared but a few years, his anticipations in part, at least, would have been realized. The Erie, Champlain, and Ohio canals, are but the commencement of a system, the progress of which nothing can arrest. In our own state the Lackawaxen Canal, from the head waters of the Delaware to the Hudson, is nearly completed: a canal from Oswego, on Lake Ontario, to the Erie Canal, and a canal to make more perfect communications between the Cayuga and Seneca lakes, and the Erie Canal, are in great forwardness.

At the last session of the legislature, a law was passed, authorizing surveys for seventeen canals, in different parts of the state.

The legislature had a just estimate of the work in which they were about to engage, when, in the preamble to their act of eighteen hundred and seventeen, they said the completion of these enterprises will elevate the character of the United States. It must do so, when it is considered, that the New York canals have been executed by a single member of the union, which, less than fifty years ago, was a colony, with a population not exceeding two hundred thousand; that of that time eight years have been passed in struggles for independence, and three years in a war to which she was a party with the most powerful nation on earth.

But, whatever may be thought abroad, we can not but have a just pride in the execution of works, which are not surpassed. Posterity will look back to those who transmitted these blessings, with admiration and veneration. The fourth of November, eighteen hundred and twenty-five, when we shall for the first time

have in our harbour boats from Lake Erie, will ever live in the memories of a grateful people; and the splendour with which that event will be celebrated by the city of New York, will be remembered, as an evidence of the patriotism and liberality of her citizens and magistrates.*

New York takes the lead of all the states in commerce, and perhaps now in manufactures, as it does in population; but the quantity or value of manufactures in any state is very difficult to ascertain. The exports consist of wheat, Indian corn, rye, beef, pork, lumber, pot and pearl ashes, and various manufactures. The value of exports, in 1816, was 19,690,031 dol-

* *Note.*—The learned writer of the preceding memoir has, probably through delicacy, made two omissions, which the committee deem it their duty to supply.

In a former part of the memoir, reference is made to a report, submitted as early as the year 1724, to the colonial governor, by the then *Surveyor General of the province of New York*; and immediately afterwards, the author of the report to Governor Burnet, is designated as the *Historian of the Five Indian Nations*. And again, in a few pages following, he is referred to as the *Surveyor General of the province, &c.* His name, however, is nowhere mentioned in the memoir.

The report alluded to is a most able document. It is entitled, "A Memorial concerning the Fur trade of the Province of New York, presented to his Excellency William Burnet, Esq., Captain General and Governor, &c., by CADWALLADER COLDEN, Surveyor General of the said Province, the tenth of November, seventeen hundred and twenty-four."

In this report the author not only describes the water-courses and portages between this and Canada, and those between us and the great western Lakes, with wonderful accuracy, but presents, in the clearest manner, the immense facilities which these water communications are susceptible of affording to our internal trade. He also carries his views beyond the Lakes to the Mississippi, and after stating that "many of the branches of that river come so near to the branches of the rivers which empty themselves into the great Lakes, that in several places there is but a short land carriage from the one to the other;" he concludes with the following emphatic observation:—"If one considers the length of this river, (the Mississippi,) and its numerous branches, he must say, that by means of this river and the Lakes, there is opened to his view such a scene of inland navigation, as can not be paralleled in any other part of the world."

The report will be found at length in his *History of the Five Indian Nations*, printed in London, in 1747. A map is attached to the work, showing the Lakes, the proximity of many of the important water-streams to them, and the portages or carrying places.

Mr. Colden was the lieutenant-governor of the province of New York for many years, and the administration of the government repeatedly devolved upon him, by the death or absence of several governors in chief. He was a man of great ability and probity, and maintained a literary and philosophical correspondence with Lunneus, Dr. Franklin, Gronovius, Dr. Pottersfield, Dr. Whittle, of Edinburgh, Mr. Peter Collison, F. R. S., of London, and other distinguished men of the age. His life will be found in Dr. Rees' *Cyclopædia*, Philadelphia edition, vol. ix.

The writer of the memoir, who is the grandson of Governor Colden, has, perhaps with propriety, omitted to introduce his own name. The work, however, which he has prepared at the request of the committee of the corporation, shows his high estimate of the canal policy.

It is, nevertheless, due to him to state, that he was one of a committee who, in eighteen hundred and fifteen, was appointed by a meeting of citizens, in the city of New York, to draw a memorial to the legislature in favour of the contemplated western and northern canals. In 1818, Mr. Colden was elected one of the vice-

lars; in 1817, 18,707,433; in 1825, 35,259,261, of which 14,607,703 was foreign produce; and a great portion of the domestic produce was from other states. The tonnage in 1821 was 281,148. The duties paid or secured at the custom-house in New York, in 1831, was about 18,000,000 dollars, or two thirds of the whole revenue of the United States.

The number of whale ships owned in this state, is 41; tonnage over 12,000 tons, employing a capital of upwards of \$1,000,000 and about 1,000 men. There are also above 100 steam-boats navigating its waters.†

The following statistical account from Williams's

presidents of the "New York Corresponding Association for the Promotion of Internal Improvements."

In the same year, 1818, he represented the city of New York in the assembly of the state, and drafted the answer to the speech of Governor Clinton; a part of that answer is contained in the memoir, pages 367, 368, and shows the then views of Mr. Colden on the great work, the completion of which we have lately celebrated.

In 1824, Mr. Colden was elected a member of the senate, from the first senatorial district, and in that public station, which he yet fills, he has lost no opportunity to advance the cause of internal improvements. In 1825, he was chosen one of a joint committee of the senate and assembly, and assisted to compile that invaluable collection of official documents, consisting of two octavo volumes, entitled, "Laws of the State of New York in relation to the Erie and Champlain Canals, together with the Annual Reports of the Canal Commissioners, and other Documents requisite for a Complete Official History of those Works; also correct Maps, delineating the Routes of the Erie and Champlain Canals, and designating the lands through which they pass." This collection is referred to in the memoir, page 370. The committee conclude by remarking, that Mr. Colden, as a private citizen, and in his official station, has, throughout, shown himself the zealous and constant friend of every measure which was calculated to open to us that vast "inland navigation," which his grandfather, more than a century ago, so ably described.

(Signed,)

R. RIKER, ASA MANN, WM. A. DAVIS,
THOS. BOLTON, JOHN AGNEW,

Committee of the Corporation of the City of New York.

† To this state belongs the honour, notwithstanding the many rival claims set up by foreigners, of originating the first successful steam-boat. We extract from the *Encyclopædia Americana* the following remarks on the first rise and subsequent improvements in steam navigation:—

"John Stevens, of Hoboken, commenced his experiments on steam navigation in 1791. He invented the first tubular boiler. His first attempts were made with a rotary engine, for which, however, he speedily substituted one of Watt's. With various forms of vessels, and different modifications of propelling apparatus, he impelled boats at the rate of five or six miles per hour. In the year 1797, Chancellor Livingston built a steam-boat on the Hudson river. In the full confidence of success, Livingston applied to the legislature of New York for an exclusive privilege, which was granted on condition that he should, within a year, produce a vessel impelled by steam at the rate of three miles per hour. This he was unable to effect, and the project was dropped for the time. In the year 1800, however, Livingston and Stevens united their efforts, and were aided by Mr. Nicholas Roosevelt. Their apparatus was a system of paddles resembling a horizontal chain-pump, and set in motion by an engine of Watt's construction. The joint proceedings of these persons were interrupted by the appointment of Chancellor Livingston to represent the American government in France; but neither he nor Stevens was yet discouraged: the latter continued to pursue his experiments at Ho-



New York Register, (quoted in the American Almanac,) furnishes many interesting particulars of the state of New York in 1825. Since that time the number of factories have much increased.

Whole number of souls	1,616,458
Males	822,897
Females	793,561
Aliens	40,430
Population, excluding aliens, paupers, and persons of colour not taxed	1,531,648
Paupers	5,610
Persons of colour not taxed:	38,770
Do. taxed	931
Do. qualified to vote	298
Persons subject to militia duty	180,645
Do. qualified to vote	296,132
Deaf and Dumb persons	645
Of which 141 are supported by charity.	
Idiots	1421
Of which 442 are supported by charity.	
Lunatics	819
Of which 184 are supported by charity	
Married females, under 45 years	200,481
Unmarried ditto, between 16 and 45	135,391
Do. under 16 years	361,624
Marriages the year preceding	11,553

boken, while the former carried to Europe high-raised expectations of success. About this time, an attempt was made at steam navigation under the patronage of Lord Dundas, of Kerse. The attempt was made by Symington as engineer, who limited himself to the drawing of boats upon a canal. The experiment was made upon the Forth and Clyde canal; but the boats were drawn at the rate of no more than three and a half miles per hour; which not answering the expectations of his patron, the attempt was abandoned. During this enterprise, Symington asserts that he was visited by Fulton, who stated to him the great value such an invention would have in America, and, by his account, took full and ample notes. In the attempt he thus makes to claim for himself the merit of Fulton's subsequent success, he is defeated by the clear and conclusive evidence, that Fulton exhibited in a court of law, of his having submitted a plan analogous to that he afterwards carried into effect, to Lord Stanhope, in 1795, six years prior to the experiment of Symington. Fulton, after having occupied himself at Paris, along with Livingston, in the investigation of the capabilities of different apparatus for propulsion, was finally led to the conviction, that, of all methods proposed, the paddle-wheels possessed the greatest advantages. He next planned a mode of attaching wheels to the engine of Watt, ingenious in itself, but complicated; and which he afterwards simplified extremely. Up to this time, the relation of the force of the engine to the velocity of the wheels, and the resistance of the water to the motion of the vessel, had never been made a matter of preliminary calculation. Aware, however, that upon a proper combination of these elements all positive hopes of success must depend, he had recourse to the recorded experiments of the society of arts, and, limiting his proposed speed to four miles per hour, planned his machinery and boat in conformity. The vessel was then constructed at Paris, and, being launched upon the Seine, performed its task in exact conformity to his anticipations. This experiment was performed in 1803. The trial having proved successful, it was resolved to take immediate measures to have a boat of large size constructed in the United States; but as, at that time, the workshops in America were incapable of furnishing a steam engine, it became necessary to order one from Watt and Bolton. This was done, and Fulton proceeded to England to superintend its construction. In the mean time, Livingston was sufficiently fortunate to obtain a renewal of the exclusive grant from the state of New York. The engine reached New York towards the close of the year 1806, and the vessel built to receive it was set in motion in the summer of 1807. The success that attended it is well known. In the mean time, Livingston's former associate, the

Births, male 31,514, female 29,689	60,383
Deaths, male 12,525, female 10,019	22,544
Acres of improved land	7,160,967
Neat cattle	1,513,421
Horses	349,628
Sheep	3,496,539
Hogs	1,467,573
Yards of fulled cloth, domestic manufacture, preceding year	2,918,233
Ditto flannel and other woollen cloths, not fulled	3,468,001
Ditto linen, cotton, and other cloths	8,079,992
Grist mills	2,274
Saw mills	5,195
Oil mills	121
Fulling mills	1,222
Carding machines	1,584
Cotton factories	76
Woollen factories	189
Cotton and woollen factories	28
Iron works	170
Trip-hammers	164
Distilleries	1,129
Asheries	2,105

A large fund in money and lands has been appropriated to the support of common schools. In 1823, there were 7,382 common schools; 400,534 children

elder Stevens, had persevered in his attempts to construct steam-boats. In his enterprise he now received the aid of his son; and his prospects of success had become so flattering, that he refused to renew his partnership with Livingston, and resolved to trust to his own exertions. Fulton's boat, however, was first ready, and, secured the grant of the exclusive privilege of the state of New York. The Stevenses were but a few days later in moving a boat with the required velocity, and, as their experiments were conducted separately, have an equal right to the honour of invention with Fulton. Being shut out of the waters of the state of New York, by the monopoly of Livingston and Fulton, Stevens conceived the bold design of conveying his boat to the Delaware by sea; and this boat, which was so near reaping the honour of first success, was the first to navigate the ocean by the power of steam. From that time until the death of Fulton, the steam-boats of the Atlantic coast were gradually improved, until their speed amounted to eight or nine miles per hour. When the exclusive grant of the state of New York to Livingston and Fulton was set aside, the younger Stevens prepared a boat for the navigation of the Hudson, which performed its voyages at the rate of thirteen and a half miles per hour. Steam-boats were not introduced into Great Britain until 1812, five years later than the successful voyage of Fulton. Bell built the first boat upon the river Clyde, at Glasgow. In March, 1816, the first steam-boat crossed the British channel from Brighton to Havre. Since that period, their use has been much extended, and their structure improved; but no European steam-boat is at present known to possess a speed above nine miles per hour. In 1815, steam-boats, previously constructed by Fulton for the purpose, commenced to run as packets between New York and Providence, a part of which passage is performed in the open sea. Two steam-packets now run between New York and Charleston. In the steam-boats of the Ohio and Mississippi, high pressure engines are now in the most general use: the boilers are generally cylindrical, with internal flues, and the position of the cylinder is horizontal. In France, steam navigation has been of more recent introduction than in England. Five years elapsed from the time of Fulton's successful voyage until Bell navigated the Clyde; four more passed before a boat built in England crossed the channel, and proceeded up the Seine to Paris.

"As steam navigation took its rise on the Hudson, so the steam-boats navigating that river have uniformly been before all others in point of speed. Two vessels on this river have a speed of thirteen and a half miles per hour; and many others have approached this so nearly that the difference of passage has not been many minutes in the distance of 150 miles."

were educated during eight months, and 182,802 dollars expended from the public funds for this purpose. There is a fund for academies amounting to 150,000 dollars. The colleges also are well endowed: they are Columbia College, in New York; Union College, in Schenectady; Hamilton College, in Clinton; and two medical colleges, one in New York, the other in Fairfield, Herkimer county.

The Presbyterians have 5 synods, 29 presbyteries, 587 churches, 486 ministers, 124 licentiates, and 54,093 communicants; the Dutch Reformed, 148

churches, 111 ministers, 7 licentiates, and 8,672 communicants; the Associate Synod of North America, 15 congregations, 13 ministers, and 1,668 communicants; the Methodists, 73,174 members; the Baptists, 549 churches, 387 ministers, and 43,565 communicants; the Episcopalians, 129 ministers; the Lutherans, 27 ministers, and 2,973 communicants; the Roman Catholics, Friends, and Universalists are considerably numerous; the Unitarians have 5 societies and 2 ministers, and there are some Shakers, and some United Brethren.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

NORTH DISTRICT.						
Counties.	Population, 1820.	Population, 1830.	County Towns.	Population, 1830.	Distance. A.* W.†	
Albany, E. M.	39,116	53,560	ALBANY	24,238		376
Allegany, W. M.	9,330	26,218	Angelica	998	256	327
Broome, S. M.	11,100	17,582	Binghamton	1,203	145	291
Cattaraugus, W. M.	4,090	16,726	Ellicottsville	626	292	328
Cayuga, M.	38,897	47,947	Auburn	4,486	166	340
Chataouque, W.	12,568	34,057	Mayville		336	349
Chenango, S. M.	31,215	37,404	Norwich	3,774	110	332
Clinton, N. E.	12,070	19,344	Plattsburgh	4,913	162	539
Cortland, M.	16,507	23,693	Cortlandville	3,573	142	511
Delaware, S. M.	26,587	32,933	Delhi	2,114	77	341
Erie, W.	15,668	35,710	Buffalo	8,653	284	376
Essex, N. E.	12,811	19,387	Elizabethtown	1,729	126	503
Franklin, N.	4,439	11,321	Malone	2,207	212	523
Genesee, W.	39,835	51,992	Batavia	4,271	244	370
Hamilton, M.	1,251	1,324	Wells	340	72	451
Herkimer, M.	31,017	55,869	Herkimer	2,486	80	392
Jefferson, N. W.	32,952	48,515	Watertown	4,768	160	412
Lewis, N. M.	9,227	14,958	Martinsburgh	2,382	129	431
Livingston, W. M.	19,196	27,719	Genesee	2,675	226	345
Madison, M.	32,208	39,037	{ Cazenovia		113	349
Monroe, W. M.	26,529	49,862	{ Morrisville		101	353
Montgomery, E. M.	27,569	43,595	Rochester	9,269	219	361
Niagara, W.	7,322	18,485	Johnstown	7,700	45	415
Oneida, M.	50,997	71,326	Lockport	2,022	288	403
Onondaga, M.	41,461	58,974	{ Utica	8,323	96	383
Ontario, W. M.	35,312	40,167	{ Rome	4,360	107	401
Orleans, W. M.	7,625	18,485	{ Whitesborough		100	387
Oswego, W. M.	12,374	27,104	Syracuse		133	342
Otsego, M.	44,856	51,372	Canandaigua	5,162	195	336
Rensselaer, E.	40,153	49,472	Albion		257	289
Saratoga, E. M.	36,052	36,616	{ Oswego	2,703	167	379
St. Lawrence, N. W.	16,073	36,351	{ Richland	2,733	153	397
Schenectady, E. M.	13,081	12,334	Cooperstown	1,115	66	372
Schoharie, M.	23,154	27,910	Troy	11,405	6	363
Seneca, W. M.	17,773	21,031	Ballston	2,113	29	406
Steuben, S. W. M.	21,989	33,975	Potsdam	3,650	216	484
Tioga, S. W. M.	14,716	27,704	Schenectady	4,258	15	391
Tompkins, S. W. M.	26,178	36,545	Schoharie	5,146	32	381
Warren, E. M.	9,453	11,795	{ Ovid	2,756	171	317
Washington, E.	38,831	42,615	{ Waterloo	1,837	173	336
Wayne, W. M.	20,319	33,555	Bath	3,387	216	299
Yates, W. M.	11,025	19,019	{ Elmira	2,962	198	273
Total	944,262	1,366,467	{ Owego	3,060	167	274
Total of New York		1,913,508, of whom 46 are slaves.	Ithaca	5,270	163	290
			Caldwell	797	62	439
			{ Salem	2,972	46	423
			{ Sandy Hill		50	427
			{ Lyons	3,603	181	345
			{ Palmyra	3,434	196	349
			Penn Yann		185	314

* From Albany.

† From Washington.



VIEW OF NEWBURGH.



SOUTH DISTRICT.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Population, 1830.	Distance.	
					A.*	W.†
Columbia, E.	38,330	39,952	Hudson	5,395	29	335
Dutchess, S. E.	46,615	50,926	Poughkeepsie	7,222	75	301
Greene, E. M.	22,996	29,525	Catskill	4,861	34	337
Kings, S.	11,187	20,537	Flatbush	1,143	156	230
New York, S.	123,706	202,589	New York	202,589	151	225
Orange, S.	41,213	45,372	{ Goshen	3,361	105	266
Putnam, S. E.	11,268	12,701	{ Newburgh	6,424	96	282
Queens, S.	21,519	22,276	Carmel	2,379	106	306
Richmond, S.	6,135	7,084	N. Hempstead		174	248
Rockland, S.	8,837	9,388	Richmond		167	221
Suffolk, S. E.	24,272	26,980	Clarkstown	2,298	122	251
Sullivan, S.	8,900	12,372	Suffolk, C. H.		225	299
Ulster, S. M.	30,934	36,551	Monticello		113	275
Westchester, S. E.	32,638	36,456	Kingston	4,170	58	313
Bedford			Bedford	2,750	135	268
Total	428,550	536,623				

POPULATION AT DIFFERENT PERIODS.

Population.	Population.	Increase.	Slaves.
In 1701, 30,000	In 1800, 586,050		21,324
1731, 50,395	1810, 959,349	From 1790 to 1800, 245,930	20,613
1749, 100,000	1820, 1,372,812	1800 1810, 372,999	15,017
1771, 163,338	1825, 1,616,458	1810 1820, 413,763	10,088
1790, 340,120	1830, 1,913,508	1820 1830, 540,696	46

GROWTH OF THE CITIES OF NEW YORK, ALBANY, TROY, BROOKLYN, ROCHESTER, BUFFALO, UTICA, SCHENECTADY, AND HUDSON.

New York.		Albany.		Troy.		Brooklyn.	
In 1696, 4,302	In 1800, 60,489	In 1790, 3,498		In 1810, 3,885		In 1800, 3,278	
1731, 8,622	1810, 96,373	1800, 5,349		1820, 5,264		1810, 4,402	
1756, 10,381	1820, 123,706	1810, 9,356		1825, 7,859		1820, 7,175	
1773, 21,876	1825, 167,086	1820, 12,630		1830, 11,405		1830, 12,043	
1786, 23,614	1830, 202,589	1825, 15,974					
1790, 33,131		1830, 24,238					
Rochester.		Buffalo.		Utica.		Schenectady.	
In 1820, 1,502	In 1810, 1,508	In 1810, 1,700		In 1820, 3,939		In 1820, 5,310	
1825, 5,271	1820, 2,095	1820, 2,972		1825, 4,058		1825, 5,004	
1826, 7,669	1825, 5,140	1825, 5,040		1830, 4,268		1830, 5,392	
1830, 9,269	1830, 8,653	1830, 8,323					

The preceding table indicates how great a number of important towns have arisen in this state. The capital of the state is Albany; but the only one, respecting which our limits will permit us to enter on any details, is the great commercial city of New York.

This city is situated on the point of York Island, at the mouth of the Hudson, in north latitude 40°. It was founded by the Dutch, in 1615, under the name of New-Amsterdam, and was appropriated by the British in 1696. The island on which it stands is fifteen miles long, and from one to three miles broad. The city is situated on the south part of the island, and extends along the Hudson about two miles, and from the Battery along the East River, properly a branch of the Hudson, nearly four miles. The early settlements were commenced at and near the Battery, from which streets were extended without order or regularity; and this accounts for the

seeming want of taste in laying out the streets towards the docks and harbour.

The Battery is situated at the south-west point of the city, opposite to Governor's Island. It possesses attractions unsurpassed perhaps by any other similar place of resort in the world, justly commanding the admiration of every visiter. It is handsomely laid out into gravel-walks, and tastefully decorated with shrubs and trees. It is much frequented by the citizens in the warm season, as well for the purpose of partaking of the refreshing sea-breeze, as for enjoying the prospect, which includes the harbour with its various shipping, Governor's Island, Bedlow's Island, and Ellis's Island, on each of which are military stations; the shores of New Jersey and Long Island, with the flourishing town of Brooklyn, and the numerous country-seats in its vicinity. Castle Garden, connected with the battery by a bridge, is

* From Albany.

† From Washington.

TOPOGRAPHY OF THE UNITED STATES.

much frequented during the summer evenings. It has a fine promenade, and is often rendered attractive by a display of fire-works from its enclosure, and other amusements.

Broadway, the most splendid street in the city, runs through the centre, and extends three miles in length and about eighty feet in width. It is the great and fashionable resort for citizens and strangers, and is much crowded during pleasant weather. In this avenue are Grace, Trinity, and St. Paul's Churches, the Adelphi Hotel, City Hotel, National Hotel, Franklin House, American Hotel, Washington Hall, Masonic Hall, and a variety of shops, with elegant and extensive assortments of merchandise of every description. Opposite Trinity Church Wall street opens, which contains the Exchange, and most of the banks, together with the principal part of the brokers' and insurance offices. At the termination of Wall street, is the Tontine coffee-house, an extensive and handsome establishment. On passing up Broadway still farther, are Cedar and Courtlandt streets, both of which lead to the Hudson River, where the steam-boats start for Albany. At the foot of Courtlandt street is the ferry to Jersey city. A little further up is Fulton street, at the corner of which stands St. Paul's Church. Fulton street leads to the East River; along the docks of which are the steam-boats for the New England ports. A little below are the boats for Newport and Providence; above, for Bridgeport, Saybrook, Hartford, New London, and Norwich. The New Haven boats lie at Fly Market Dock, still farther below. Above St. Paul's Church are the Park and the City Hall, situated in the centre of the city, the former containing about eleven acres, which are ornamented with much taste, and enclosed by a substantial iron railing. It furnishes a cool and fashionable resort for men of business and pleasure, after the fatigue and heat of a summer's day. On the right is the Park theatre, and on the left Park place, on the west-side of which is Columbia College. The next street above Park place is Murray street, which leads to Hoboken Ferry.

Of the public buildings, the most prominent and important is the City Hall, the front of which is built of white marble. It is 216 feet long, 105 feet broad, and, including the attic story, sixty feet high. The rooms for holding the different courts of law are fitted up in a rich and expensive style. The room for holding the mayor's court contains portraits of Washington, of the different governors of the state, and of many of the most celebrated commanders of the army and navy of the United States. The founda-

tion stone of this building was laid in 1803, and the whole finished in 1812, at an expense of 500,000 dollars. It is one of the most elegant edifices in America, and reflects great credit on the inhabitants for their munificence and taste.—The Merchants' Exchange in Wall street is also a superb structure of white marble. Its front in Wall street is 114 feet, and its depth, extending to Garden street, 150 feet. The main body of the building is two stories high, besides the basement and an attic story. About two thirds of the basement is occupied for the post office, including a spacious corridor for the convenience of persons visiting the office, with entrances from Wall and Exchange streets. The portico of the building, to which a flight of marble steps ascends, is ornamented with Ionic columns twenty-seven feet high. In the centre is the Exchange, of an oval form, eighty-five feet long, fifty-five feet wide, and forty-five feet high, surmounted with a dome, from which light is reflected. The whole is imposing, and affords a delightful promenade. From the Exchange are doors and passages leading to a commercial reading room, and numerous newspaper and other offices within the edifice. From the attic story, a flight of stairs leads to a room in the cupola where telegraphic signals are made, which are returned from the telegraph at the Narrows, seven and a half miles distant. The height of the cupola above the attic story is sixty feet. The cost of this building, including the ground, was 230,000 dollars. It was commenced in 1824, and completed in three years.—The United States Branch Bank, in Wall street is an elegant white marble building, sixty feet in front. The ground on which it was erected cost 40,000 dollars.

Trinity church in Broadway, at the head of Wall-street, from its antique appearance generally attracts the notice of strangers. The first church on this spot was erected in 1696. Originally small, it was enlarged in 1737; but during the fire which destroyed the western part of the city in 1776, while the British troops were in possession, it was destroyed, and was not rebuilt till 1788. The present building is of stone, in the Gothic style, much like the old one, except its diminished size, and has a steeple 198 feet high. It contains a chime of bells, the only set in the city, and an excellent organ.—St. Paul's chapel is a superb structure further up the Broadway, near the Park. It contains a portico of the Ionic order, consisting of four fluted pillars of brown stone, supporting a pediment, with a niche in the centre containing a statue of St. Paul. Under the portico is a handsome monument erected by order of congress to the memory of General Montgomery, who fell at the storming of



THE CHURCH OF THE HOLY TRINITY, NEW YORK

Quebec in 1775, and whose remains were brought to New York, and interred beneath the monument, in 1820. The spire of this church is 234 feet high; and the whole building is esteemed one of the best specimens of architecture in the city. In the church-yard adjoining is an elegant monument, recently erected to the memory of Thomas Addis Emmet, an eminent counsellor at law, and brother of the unfortunate Irish orator, Robert Emmet. The plinth of the monument is one entire block, seven feet square and twelve inches thick. The Egyptian obelisk standing on this base is also in a single piece, and is about thirty-two feet high. The face towards Broadway is embellished with the American eagle sheltering a harp, unstrung, with a medallion likeness of Emmet, and with two clasped hands, having stars around one wrist, and shamrocks around the other, with an English inscription. On the north side is a Latin, and on the south, an Irish inscription. There are 132 churches in the city, many of which were erected at a very considerable expense, and are ornaments to the sections of the city in which they stand.

Columbia College, above the City Hall, was chartered in 1750, under the name of King's College. The edifice and grounds attached are extensive, and are advantageously and handsomely situated. The college contains a chapel, lecture-rooms, hall, library, museum, and an extensive philosophical and astronomical apparatus.

The New York Society Library, in Nassau-street, was commenced in 1740, and at the commencement of the revolution contained 3,000 volumes, which were destroyed or taken away by the British troops. It was re-established in 1789, and now consists of about 20,000 volumes, many of which are rare and valuable. The Athenæum, corner of Broadway and Pine street, contains a reading-room, which is open daily, except Sundays. The Historical Society has a library of 10,000 volumes, embracing many valuable

* The commercial metropolis of the American confederacy, from which nearly three quarters of the public revenue is derived, seems to demand a more extended account than is embraced in the English edition of this work. Rather than make any material alterations with the author's text, it was deemed preferable to allow it to stand as originally published, and to make such further additions, in a note, as were considered best fitted to convey more ample and precise information, even if liable to the imputation of occasional repetition. What follows, therefore, it may be proper to state, is a description of the city of New York, drawn up by Dr. John W. Francis, and printed in the American edition of Dr. Brewster's Encyclopædia, with such additions and alterations by Dr. F. as the ever fluctuating, though ever improving, condition of that city requires. The editor has the writer's permission thus freely to avail himself of this article, largely derived from original materials, and which can hardly be thought too extensive, or too circumstantial, for this revised edition of Mr. Hinton's work.

New York is the chief city of the state of New York, and the
VOL. II.—Nos. 35 & 36. 3 D

works. Near the institution are the Savings' Bank and Panorama Rotunda; and a little further up Broadway, the New York Hospital. The annual expenditure in this institution is about 40,000 dollars, and the annual number of patients from 140 to 180.

The Park Theatre is a spacious edifice. It was built in 1798, at an expense of 179,000 dollars, was destroyed by fire in 1820, and rebuilt the following year. It is eighty feet long, 165 deep, and fifty-five high, and has generally been more liberally patronised than any other theatre in the city. The New York Theatre, in the Bowery, displays much architectural beauty, and, among the modern ornaments of the city, stands pre-eminent. It has a front of seventy-five feet, is 175 feet deep, and fifty feet high. It enjoys a handsome patronage.

Brooklyn, (on Long Island,) directly opposite New York, from which it is separated by the East River, is usually reached by steam-boats, which are constantly plying between the foot of Fulton-street and that city. It has a population of about 15,000, and within a few years has risen to some importance. Its contiguity to New York, and the facilities afforded for communication between the two places, have induced many merchants and men of business to select it as a place of residence in preference to the upper parts of the city. It also contains several elegant country-seats and public gardens. Those on the bank contiguous to the East River, from their elevated situation, overlooking the bay of New York, and commanding a view of a great part of the city, are peculiarly attractive and romantic. North-east of the city, on a tract of land called the Wallabout, is a United States navy-yard, where are erected a house for the commandant, several spacious warehouses, and immense edifices of wood, under which the largest ships of war are built. The steam-frigate Fulton, which lay near the navy-yard, and was an object of attraction, was blown up at this place in 1829, occasioning the loss of several lives.*

most populous and commercial town in the United States. It is situate on York Island, at the confluence of Hudson and East rivers, in lat. 40° 42' 45" N. and 74° 4' W. lon. from Greenwich, or 3° 14' 15" E. from the city of Washington.

The island is essentially primitive, and consists mainly of one formation, gneiss. It is about fourteen and a half miles long from N. to S., and varying in breadth from half a mile to nearly two miles, comprehending about twenty-one and a half square miles. The limits of the city and county are the same, and the only legal sub-divisions are the wards, at present fifteen in number. It is separated on the north from the continental part of the state by Harlem river; from New Jersey on the west by the river Hudson; from Staten Island on the south by the bay or harbour; and by the East river from Long Island.

The city of New York was originally settled by the Dutch, in 1614, and its progress has been, since the revolutionary war, rapid beyond precedent, in numbers, wealth, commerce, and improvements.

According to the researches of a writer on American antiqui-

Smith's History of New York is well known; a second volume of that work, from the original MSS. of the author, has been lately published by the New

York Historical Society: this continuation of Smith's, brings down the history of the state, to the administration of Colden in 1762. Moulton has also lately

ties,* Henry Hudson arrived at the island of Manhattan, (York Island,) called by the natives *Manhatoes*, on the 4th of September, 1609, then occupied by a ferocious tribe of Indians; he navigated as high as Albany, and on his return to Holland transferred his right of discovery to the Dutch, who afterwards granted it to their West India Company. The latter, the next year, sent ships to Manhattan, to trade with the natives. In 1614, a fort was built by the Dutch at the southwest extremity of the island, and another, called Fort Aurania, at Orange, where Albany now stands, which was settled before the city of New Amsterdam, (New York;) the latter was most probably not permanently occupied until the year 1619. From this period it remained in possession of the Dutch until the conquest of the colony by the English, in 1664. A few years after, it was granted by Charles II. to his brother James, Duke of York and Albany; and the two principal, indeed the only cities at that time in the colony, were called after his title.

Richard Blome, in his book entitled "The Present State of his Majesties Isles and Territories in America," printed at London, in 1687, in discoursing on these occurrences, thus expresses himself:—"New York was first discovered by Mr. Hudson, and sold presently by him to the Dutch, without authority from his sovereign, the king of England, in 1608. The Hollanders, in 1614, began to plant there, and called it New Netherland; but Sir Samuel Argal, governor of Virginia, routed them; after which, they got leave of King James to put in there for fresh water, in their passage to Brazil, and did not offer to plant till a good while after the English were settled in the country. In 1664, his late majesty, King Charles the Second, sent over four commissioners to reduce the colony into bounds, that had been encroached by each other, who marched with three hundred *red coats* to Manhatoes, and took from the Dutch the chief town, then called New Amsterdam, now New York, and August 29, turned out their governor, with a silver leg, and all the rest but those who acknowledged subjection to the king of England; suffering them to enjoy their houses and estates as before. Thirteen days after, Sir Robert Car took the fort and town of Aurania, now called Albany; and twelve days after that, the fort and town of Arasapha, then Delaware Castle, manned with Dutch and Swedes; so that now the English are masters of three handsome towns, three strong forts, and a castle, without the loss of one man. The first governor of these parts for the king of England was Col. Nicols, one of the commissioners."

Herman Moll, geographer, who published in London, in 1708, the British Empire in America, 2 vols. 8vo., in his account of the city of New York, states it to have at that time contained one thousand houses, most of them "very well built." The great church [Trinity] was built in 1695. A library, he states, was erected in 1700; and the Dutch built mills to saw timber, "one of which would do more in an hour than fifty men in two days."† Tradition reports, that the first white child was a female, of the parentage of Isaac Bedlow, who arrived in New York in 1639; as secretary of the Dutch West India Company; but records in the New York Historical Society affirm, that the first child of European parentage in New Netherlands, was a Sarah Rapaelje, daughter of Jan Joris Rapaelje, born June 9, 1625. The limited extent of settlements, the age, single condition, and peculiar pursuits, of those who had arrived previously to 1625; may, as Moulton remarks, be justly inferred from this fact.

The earliest authentic record extant of the population of this city is of the date of 1656, when several new streets were laid out, and a plan of the town sent to the city of Amsterdam, for the examination and approval of the directors of the West India Trading Company. At that time the village by the name of New Amster-

dam contained only one hundred and twenty houses, of the humblest description, and one thousand inhabitants, including the garrison. Several rough engravings of the city, illustrative of its appearance at about this time, and for one hundred years after, are preserved among the records of the New York Historical Society. In 1686 the first charter was granted, which was renewed in 1730, with new privileges.

POPULATION AT DIFFERENT PERIODS.

1696,	4,302	1800,	60,489
1731,	6,628	1810,	96,373
1756,	10,381	1820,	123,706
1773,	21,876	1825,	167,059
1786,	23,614	1830,	203,007
1790,	33,131	1832,	213,500.

Averaging somewhat more than a tenth part of the entire population of the state.

The most compact part of the city is at its southern extremity, whence it extends on the north side along the course of the Hudson river, about two and three quarters of a mile, and along the East river, from the southwest angle of the battery, three miles; its circuit about eight and a half miles. The ancient irregularity of the city has been materially corrected by recent improvements; the upper, or northern parts, have been laid out with systematic regularity. Many of the streets are spacious, running in right lines, and intersected by others at right angles; in short, the whole of the upper portion of the city is laid out in this manner, and though the spirit of improvement has been active, and at a tremendous expense here, to reduce the site of New York to an entire level, there is a gentle ascent from Hudson and East rivers, and a commanding view of the city is afforded. The most distinguished streets are Broadway, commencing at the Battery, and running north by east nearly three miles, Greenwich street, Wall street, Pearl street, South street, Canal street, Grand street, the Bowery, East Broadway, &c. &c. Besides the Battery, a delightful promenade at the lowest or southern portion of the city, there are several open squares, which serve the important purposes of ventilation and health, as the Park, Hudson square, Washington square, Hamilton square, Lafayette Place, Union Place, Clinton square. The approach towards the city on the north, has also been made more advantageous by several new roads, denominated *avenues*, agreeably to a plan of the late Gouverneur Morris and De Witt Clinton.

The materials of which the earlier buildings of the city were constructed were wood, and bricks imported from Holland. The style of architecture was steep roofs, tiled gables to the streets and alleys between the houses. Speaking of New York, in 1681, Blome remarks, the town is large, containing about five hundred well built houses, built with Dutch brick, and the meanest not valued under 100 pounds. Of this latter construction not an edifice now remains; the last of this character, situate in Broad street, and bearing date, according to the Dutch fashion, 1698, having been torn down for modern architecture in the spring of 1831. The wooden edifices are comparatively few in number, and are chiefly located in the suburbs. The modern taste in building is almost exclusively confined to brick, though a few houses in different places are constructed either of granite, free-stone, or of marble, obtained within the neighbourhood. The principal streets and public buildings and stores are lighted by gas, under the management of the Gas Light Company, which went into successful operation in 1825.

Bay and Harbour.—The bay and harbour of New York may be classed among the most convenient and beautiful in the world; the banks are bold, and the bay interspersed with many handsome islands; the city and surrounding land, when viewed on the bay in approaching the city, presents a scene truly charming and picturesque, and excites general admiration. The bay may be estimated at nine miles long and five broad, without including the

* John Pintard, LL. D.

† Neither of these authorities, Blome or Moll, are mentioned by Holmes, (*Annals*), copious and accurate as is that excellent author. The Oldmixon cited by Holmes, is the edition of 1741; the work of Moll and Oldmixon has the imprint of 1708.

published a part of his historical work : it is curious in early details.

NEW JERSEY

Is bounded on the north and northeast by New York ; on the east and southeast by the Atlantic ;

branches of the rivers each side of the city. From the ocean, Sandy Hook, to the city at the head of the bay, is about twenty miles. The water is of sufficient depth to float the largest vessels, and ships of 110 guns have anchored opposite the city. On the bar at Sandy Hook, the depth of water at high tide is twenty-seven feet, and at low water twenty-one feet ; from thence to the city the channel has a depth of from forty to fifty feet.

In describing the bay of New York, a late English traveller thus writes :—" I have never seen the bay of Naples. I can therefore make no comparison ; but my imagination is incapable of conceiving any thing more beautiful than the harbour of New York. Various and lovely are the objects which meet the eye on every side ; but the naming of them would only be to give a list of words, without giving the faintest idea of the scene. I doubt if ever the pencil of Turner could do it justice, bright and glorious as it rose upon us. We seemed to enter the harbour of New York upon waves of liquid gold ; and as we dashed past the green isles which rise from its bosom like guardian sentinels of the fair city, the setting sun stretched his horizontal beams further and further, at each moment, as if to point out to us some new glory in the landscape."

It has been repeatedly observed, that the cold of winter has less effect upon the water of New York harbour, than in several places further south. The usual tides are about six feet, and this, with the greater rapidity of the currents, may be looked upon as the prominent cause why so rarely inconvenience is experienced from the formation of ice. During the severe winter of 1780-1, the harbour, however, was covered by a bridge of compact ice ; and again, in the memorable winter of 1820-1, the harbour and the branches of the two rivers were obstructed by the same cause for many days. At this time the intensity of the cold was manifested by the thermometer ranging several degrees below 0 of Fahrenheit.

According to the reports made by the ward assessors of the amount of real and personal estate of the city of New York, it has been stated in 1823, as *personal*, thirty-six millions eight hundred and seventy-nine thousand six hundred and fifty-three dollars ; as *real*, seventy-seven millions of dollars. In 1829, as *personal* and *real*, somewhat less : but these estimates must be deemed as entirely too low. According to the details furnished in a valuable statistical work, (*The New York Register*), the assessed valuation of the real and personal estate in the several counties in the state of New York, for the year 1833, amounted to four hundred and sixteen millions four hundred and eighty-one thousand one hundred and thirteen dollars ; whereof the county of New York embraced as *real*, one hundred and fourteen millions one hundred and twenty-nine thousand five hundred and sixty-one dollars ; as *personal*, fifty-two millions three hundred and sixty-five thousand six hundred and twenty-six : total, one hundred and sixty-six millions four hundred and ninety-five thousand one hundred and eighty-seven dollars. The whole of the bank capital in the city of New York is about twenty millions of dollars. The aggregate capital of the marine fire insurance and other incorporated companies, may be put down at thirteen millions of dollars. According to a late statement made by Alderman Stevens to the corporation, when on the discussion of the report in favour of introducing pure and wholesome water into the city of New York, the number of dwelling-houses, stores, manufactories, and churches, was valued at seventy-five millions of dollars ; the merchandise in the city at fifty millions ; hence, the total value of buildings and merchandise is one hundred and twenty-five millions of dollars. But this estimate may be safely doubled.

Commerce.—The city of New York is justly considered the commercial emporium of the United States, and the revenue which it pays to the general government exceeds that of all the other states of the union.

on the southwest by Delaware Bay ; and on the west, by Pennsylvania. Longitude, 74° to 75° 29' ; latitude, 39° to 41° 24'. The extreme length is directly from south to north, 170 miles ; area, 7,870 square miles ; mean breadth, forty-six miles.

New Jersey presents three very marked divisions,

The following table of exports and customs, during the respective years, will show the increase of commerce since the year 1814, at which period the country was involved in war with Great Britain:—

Year.	Exports.		Total Amount of Exports.	Custom duties.
	Domestic.	Foreign.		
1815	4,189,951	746,558	4,936,509	14,554,645
1816	10,475,985	8,470,613	13,946,598	10,785,354
1817	12,639,197	4,384,817	17,024,014	6,329,123
1818	11,873,934	5,720,237	17,594,171	8,259,011
1819	6,542,742	4,318,923	10,861,665	6,480,638
1820	7,034,322	4,735,199	11,769,511	5,487,374
1821	8,102,512	4,022,123	12,124,645	7,243,542
1822	9,228,631	6,177,063	15,405,694	9,941,702
1823	11,526,632	9,563,064	21,089,696	9,022,435
1824	11,657,312	10,652,090	22,309,362	11,178,139
1825	19,257,749	14,774,530	34,032,279	15,752,100
1826	10,743,846	8,693,383	19,437,229	11,525,862

A more satisfactory view of the commercial character of the city of New York, may be obtained from the official records of the custom-house of that district.

EXPORTS FROM THE DISTRICT OF NEW YORK IN 1830 AND 1831.

1830. First Quarter.

Domestic, in American vessels	2,234,992
do. in Foreign	366,375
Foreign, in do.	144,212
do. in American	848,215 = 3,593,794

Second Quarter.

Domestic, in American vessels	3,427,645
do. in Foreign	315,973
Foreign, in do.	265,147
do. in American	1,612,234 = 5,620,990

Third Quarter.

Domestic, in American vessels	2,283,474
do. in Foreign	360,421
Foreign, in do.	273,499
do. in American	1,198,731 = 4,116,325

Fourth Quarter.

Domestic, in American vessels	2,600,352
do. in Foreign	269,631
Foreign, in do.	184,504
do. in American	1,329,156 = 4,383,643

Total exports in 1830 \$17,714,561

1831. First Quarter.

Domestic, in American vessels	3,038,395
do. in Foreign	308,963
Foreign, in do.	170,305
do. in American	1,282,528 = 4,800,191

Second Quarter.

Domestic, in American vessels	3,239,656
do. in Foreign	695,258
Foreign, in do.	336,252
do. in American	2,658,830 = 6,949,996

first, a marine or sandy section; secondly, a hilly or middle section; and, thirdly, a mountainous section. The first occupies nearly one half the area of the state. A line from the mouth of Shrewsbury River to

Third Quarter.

Domestic, in American vessels	3,109,94
do. in Foreign	491,547
Foreign, in do.	459,010
do. in American	3,385,423 = 7,445,927

Total for three quarters of 1831 . . . \$19,196,114

The total invoice value of imports, including dutiable charges, in 1830, was,

	American.	Foreign.
1st quarter,	6,900,229	339,900
2d do.	8,716,599	417,672
3d do.	12,090,705	719,826
4th do.	10,608,623	266,166

The total amount of duties rising from imports at the port of New York, the first three quarters of the year 1831, amounted to about \$15,500,000, an excess over the year 1830, of three millions of dollars. The total amount of duties for 1831 may be stated at rising twenty millions.

The sales of domestic manufactures at the ware-houses in the city of New York, in the year 1830, being principally of wool, cotton, and iron, are estimated to amount to twenty-five millions of dollars, exclusive of large amounts of articles made and sold by the mechanics of the city.

The imports and exports of foreign merchandise to and from the district of New York, during the year ending 30th of September, 1832, amounted to fifty-two millions eight hundred and fifty-five thousand nine hundred and seventy-nine dollars; of which, forty-one millions nine hundred and fourteen thousand four hundred and ninety-one dollars, were imports; and ten millions nine hundred and forty-one thousand four hundred and eighty-eight dollars, were exports.

As matters of reference, the following facts are worthy of insertion here:—The imports of the colony of New York to Great Britain in 1701, were valued at eighteen thousand five hundred and forty-seven pounds: the exports at thirty-one thousand nine hundred and ten pounds.

From the statement published of the commerce and navigation of the United States for the year 1833, and comparisons of some of the items with those of preceding years, the following statistical items are made:—The whole amount of exports for the year was \$90,140,433, of which \$70,317,698 were of domestic, and \$19,822,735 of foreign articles. The total for 1832 was \$87,176,443, of which \$63,137,470 were domestic, and \$24,039,473 foreign. For 1831, the total was \$81,310,583, of which \$61,277,057 were domestic, and \$20,033,526 foreign.

The exportation of flour for the three years was, in 1831, 1,806,529 barrels; 1832, 864,919 barrels; 1833, 955,788 barrels. Of cotton, Sea Island, for 1831, 8,311,762 pounds; 1832, 8,743,373 pounds; 1833, 11,142,987 pounds. Of other cottons, the exports were respectively 268,668,122 pounds; 313,471,749 pounds, and 313,555,617 pounds.

The aggregate value of all the importations into the United States was, for the three years severally, \$103,191,124; \$101,029,266; and \$108,118,311.

The navigation tables furnish the following, as the total of the tonnage of the United States, registered, enrolled, and licensed for those years; 1,181,176 tons; 1,267,846 tons; 1,439,450 tons. In 1833, there arrived 1,111,441 tons of American shipping; and departed 1,142,160 tons. Of foreign shipping, there arrived 496,705 tons, and departed 497,039 tons.

Among the items of importation in 1833, are, 15,698,050 gallons of molasses; 14,634,822 pounds of tea; 99,955,020 pounds of coffee; 85,689,944 pounds of brown sugar; and 11,999,089 pounds white sugar.

Bordentown, will very nearly separate the alluvial from the hilly tract. Between this natural limit and the continuation of the Blue Ridge, New Jersey is delightfully variegated by rich and bold scenery.

AMOUNT OF SPECIE EXPORTED FROM NEW YORK, FROM 1ST OCTOBER, 1830, TO SEPTEMBER 30TH, 1831.

Fourth Quarter, 1830, October, November, and December.

Gold and silver coin, American	267,785
Gold specie, foreign	38,360
Silver do. do.	81,331
	<hr/> 387,476

First Quarter, 1831, January, February, and March.

Gold and silver coin, American	14,000
Gold specie, foreign	43,416
Silver do. do.	183,344
	<hr/> 240,760

Second Quarter, 1831, April, May, and June.

Gold and silver coin, American	96,262
Gold specie, foreign	58,825
Silver do. do.	1,275,366
	<hr/> 1,430,453

Third Quarter, 1831, July, August, and September.

Gold and silver coin, American	686,108
Gold specie, foreign	170,871
Silver do. do.	2,392,697
	<hr/> 3,249,676

Total exported \$5,308,365

Since the completion of the Erie canal the commerce of the city has been greatly augmented by the numerous canal boats which ply between Buffalo and Albany, bringing ultimately to the commercial emporium, the rich products of the great western country and the lakes, and sending in return the fine manufactures and luxuries of Europe. Numerous steam-boats, about nine months in the year, navigate the Hudson and East rivers, several of them superior in speed and architectural beauty to those on any other waters. In these waters Robert Fulton, in 1807, made the first successful navigation by steam: the speed of his first boat was about five miles per hour: the most rapid speed yet attained by the progress of improvement, has been seventeen miles per hour, by steam-boats on the Hudson.

Banks.—There are nineteen city banks in New York, besides a branch of the United States bank. Some of these edifices are neat and commodious, of architectural beauty and proportion, particularly the Branch bank, the bank of New York, the City bank, and the Phoenix bank. Besides these banks, for the purposes of discount and deposit and other mercantile transactions, there is a *bank for Savings*, incorporated in 1819, and a *Seamen's bank* for a like purpose, incorporated in 1829. According to the report of the trustees of the former of these institutions for the year 1830, the number of depositors from the 1st of January to the 31st of December, 1830, was fourteen thousand two hundred; and the total amount of deposits for that period was seven hundred and forty-one thousand five hundred and eighty-three dollars ninety-five cents. The results which have arisen from the bank of Savings, have been invaluably advantageous, and when it is considered that the total receipts of this corporation, from its commencement in 1819, to December, 1833, have been nearly seven millions of dollars, the founders of this institution, among whom John Pintard, L.L. D. deserves a particular notice, can not but feel the highest satisfaction. The *Seamen's bank* for savings is also in successful operation for the benefit of that meritorious class of men.

In an enumeration of the moneyed institutions of the city, the *Custom-house*, which renders the greater portion of the entire revenue of the United States, deserves to be mentioned. It is situate in Wall street, at the head of Broad street. It is sufficiently to be



1877
St. Louis - Mo.

This hilly region contains the counties of Middlesex, Hunterdon, Somerset, Essex, Morris, and Bergen. It is also decorated by several mountain ridges, but

lamented, that an appropriate edifice has not yet been erected by the government of the union.

This remark of 1832 is not applicable in 1834. A new Custom-house is now erecting at the corner of Wall and Nassau streets, and extending to Pine street. The building is reported to be, according to Williams, 177 feet long, and 89 feet wide; and the form and order of the building to be similar to that of the Parthenon at Athens. It is to stand on a basement story, ascended by nineteen steps from Wall street, and six steps on Pine street. There are to be eight Grecian Doric columns at each front, and fifteen columns and antæ on each side attached to the walls. There is also to be a second row of six smaller columns back of and parallel with those of the main front, leaving a space of ten feet between the two rows, and nine feet between the inner row and the front wall of the building. Back of the two extreme columns of the inner row there are to be two antæ, and six antæ attached to the walls of the rear front, leaving a space of eight feet and a half between the columns and antæ. There will thus be twenty-four outside columns, five feet eight inches diameter at the bottom, and thirty-two feet high, including the capital, and eighteen antæ on the two sides, of the same height, five feet wide, and three feet nine inches projection from the walls. The six inner columns of the main front will be four feet eight inches diameter at bottom, and the antæ to correspond. The building is to be two stories high, except the great business hall, part of which is to be vaulted as high as the roof will permit, and its centre finished with a dome sixty-two feet in diameter. This hall will occupy the centre of the building, and will be one hundred and fifteen feet long, leaving a small vestibule at each end to enter from. It is to be seventy-seven feet wide in the *centre part*, which is a circle of seventy feet diameter, with the length and breadth of the room extending beyond its circumference to these dimensions; and the four parts so extended beyond the circle are thirty-three and a half feet wide, leaving six rooms and three circular staircases in the four corners, the two largest rooms to be twenty-four by twenty-one feet each, besides a square staircase in the rear, and three vaults for papers, at the two ends of each vestibule. The same division of the room is made in the second story. Nearly the same number, shape, and sizes of rooms, are had in the basement, as above in the other stories, leaving all the area of the same shape and size as the great hall immediately about it; with the addition of sixteen fluted Doric columns to support the vaulting and the pavement under the dome of the great hall.

Manufactures.—The free and open access of the port of New York to the commerce of the whole world, has been attended with a necessary disadvantage to the amount of her manufactures. Nevertheless, there is a number of extensive establishments for manufacturing purposes, and in a thriving condition. Among these are several iron foundries, a steel manufactory, type and stereotype foundries, sugar works, refineries, and distilleries, hat, whip, fur, shoe, and boot manufactories, locks, brass nails, cast iron stoves, glass houses, breweries, printing ink manufactories, carding machines, very extensive manufactories of saddlery, cabinet furniture, piano-forte and musical instrument manufactories, coach makers' establishments, manufactories for tobacco, &c. &c. Copper plate engraving, wood engraving, and the printing of books, are also on an extensive scale: and the first work on stereotype plates, from an American press, issued from New York. If rightly remembered, it was the Assembly of Divines' Catechism: John Watts, 1813. The stereotype establishments of Conner & Cooke, Chandler, J. S. Redfield, and others, are on an enlarged scale. It is supposed more than five hundred hands are employed in this business, and manufacture annually to the amount of three hundred and twenty thousand dollars. The manufactory of printing presses as a branch of industry, occupies many persons; and it deserves to be remarked, that material improvements in this important machine have been made by several individuals of proficiency in mechanical invention: by S. Rust, P. Smith, and R. Hoe; the last named individual has contributed some improvements on the Napier press. The

the true mountain portion of New Jersey, is the extreme northern part of the state, composed of the counties of Warren and Sussex. The descent from

New York chemical manufactory is an extensive institution, and annually sends out a large supply of sulphuric, nitric, and muriatic acids, alum, borax, and other chemicals. Many of the mineral articles of the materia medica are also made here on a large scale. There is also a steam sugar refining company. The shot tower of Youle, on the banks of the East river, near Kip's bay, deserves special mention, as well as the card manufactory of the ingenious Whittemore, and the steam engine manufactories and foundries of Allaire, M'Queen, Youle, and Bliss. The West Point foundry company also carry on an extensive manufactory for steam-engines and rail road carriages. The manufacture of leather is very extensively prosecuted by persons resident in the city: the tanneries are situated in various parts of the state—but principally in Greene and Delaware counties, where bark is abundant, and water privileges abound.

The number of hats furnished in the city of New York is estimated at not less than one and a half millions of dollars, at three dollars per hat. The American Institute, incorporated by the legislature of New York, in 1828, for the promotion of manufacturing interests, and who hold their annual fair in the city in October, at their anniversary in 1830 awarded premiums on the following, among other articles, manufactured in the city. Cotton goods, printed silk handkerchiefs, sewing silk, made of American silk, hardware, locks, files, and cutlery, mathematical instruments, brass nails, cast-iron stoves, silver and plated wares, clocks, cut glass, chemicals, japanned leather, upholstery, &c. As long ago as in 1820, the returns made to congress with the census, of the capital invested in manufactories in the city, amounted to nearly two millions, of which three hundred thousand dollars were invested in the manufacture of steam-engines and castings of every description.

The Dry Dock railways, an important method of repairing ships, and vessels of other descriptions, is now practised with great advantage by a company vested with banking privileges. *The Screw Dock*, an invention of singular importance and great simplicity for raising vessels with ease and rapidity out of the water, for repairs, is also in use in New York. Ample notice deserves to be taken of the extensive and elevated rank to which *ship-building* and *steam-boats* have attained at this port. Vessels in the service of almost every nation are built by her ingenious shipwrights.

Public Buildings.—New York is distinguished more by the excellence than by the number of her public buildings. Her churches collectively are entitled to considerable commendation.

The City Hall.—This conspicuous edifice, superior in splendour and extent to any other in the United States, excepting the capitol in Washington, is situate in that noble public walk, the Park. Its foundation was laid in May, 1803, and the entire structure completed in May, 1812, at the cost of five hundred and fifty thousand dollars. The building is two hundred and sixteen feet in front, by one hundred and five on the east and west fronts, and is adorned with two orders of architecture, the Ionic and Corinthian, raised on a rustic basement of nine feet in height, crowned with a balustrade, and the roof covered with copper. The centre part of the south front is finished with an attic story. On the blocking course above the attic cornice it is intended to place the arms of the city, agreeably to a design and model of the architect. The cupola is surmounted by the figure of justice. The basement story is rusticated and partly sunk; it is raised nine feet above the surface of the Park, and contains accommodations for the city watch, house-keeper, and a number of different offices. In front a terrace walk is raised three steps above the Park, from which you ascend by eleven steps to the colonnade of eight Ionic columns in front, covered with an entablature, and finished with a balustrade which forms a spacious balcony in front. You then enter into the vestibule; a corridor running longitudinally communicates with the mayor's offices, two private stairs, and with various offices in which the city business is transacted. Opposite the vestibule is a large circular marble staircase of thirty-one steps, leading to the second floor; on the wall surrounding these stairs, on the

the mountain to the hilly region is not by a gentle declivity, but abruptly, as by the steps of a stair. The elevation of the different sections has not been

second floor, stands a circular range of marble columns of the Corinthian order, the entablature of which supports the dome and sky-light. Very recently a clock has been fitted up in the cupola, which is intended to be lighted at night with gas. A circular corridor communicating with one running lengthwise of the building leads to the room for the governor of the state, the common council chambers, three court rooms, and with several offices and jury rooms. The whole plan is so arranged as to be easy of access. The south, east, and west elevations are composed of handsome white marble, brought from the quarries in Berkshire county, Massachusetts. The north part is built with brown stone, from a parsimonious fear the building committee entertained that the white stone might be too expensive. The architect was John M'Comb, Esq., but it may be added, that the sculpture and carved work were executed by and under the direction of Mr. John Le-maire. The governor's room and the room of the city council are enriched with many superior paintings, of the several governors of the state, the mayors of the city, and other public characters, executed by the pencil of Trumbull, Vanderlyn, Jarvis, &c.

The *Merchants' Exchange* was commenced on the 1st of April, 1825, and opened for business in May, 1827. It stands on Wall street, and runs through to Exchange place, a distance of about 150 feet. The principal front, which is on Wall street, is 115 feet wide, and that on Exchange place, 114 feet. The general divisions of the plan are a building of parallelogramic form on both streets, connected by one of similar form, with circular ends, which form the exchange room, and which is thus rendered accessible from both streets. Since the erection of the building, however, a street has been opened on the lower side, which, not having been foreseen at the time of designing the plan, the architect was unable to avail himself of, to present a more finished appearance on that side than at present. The front on Wall street is built entirely of white marble, from the quarries in West Chester, and is three stories high, exclusive of a basement, which is half out of ground. The front has been designed in the Ionic order, from the temple of Minerva Polias, at Priene, and an elliptical recessed portico has been introduced with great advantage, both as regards effect and convenience. A screen of four large columns and two antæ on the corners of the wings, extends across the front of the recess in a line with the front of the building. These columns are thirty feet in height, and three feet four inches in diameter at the base, and the stay of each is composed of a single block of marble. The columns support an entablature which runs across the whole front, on which rests an attic story, making a height of about sixty feet from the ground. The entrance on Wall street is by a flight of broad marble steps, flanked on each end by a pedestal. From the portico three doors open into the vestibule, and one on each hand into insurance offices. The vestibule is nearly square, and is finished in the chaste and elegant style of the little Ionic temple on the banks of the Ilissus, in Athens. From the vestibule an elliptical staircase rises on the right hand, to lead to the different stories of the front building. Advancing through the vestibule you enter the grand saloon, or exchange room, which is a magnificent apartment, eighty-five feet long, fifty-five wide, and forty-five feet high, finished in the Ionic order, after the temple of Minerva Polias, at Athens. The spacious and lofty apartment has two parallel sides, with semicircular ends, at the intersections of which are antæ and columns supporting a full entablature, with an arch resting on the columns at each end. The arches support a screen, which forms a separation between the arched ceiling of the centre and the Ionic ceilings of the alcoves, and divides the whole into three compartments, producing a pleasing variety. The whole of the ceiling is divided into panels; those of the centre being of an oblong rectangle, and those of the ends radiating from a centre. Passing through the exchange, we enter an apartment, or rather vestibule, appropriated for sales by auction of ships and real estate, &c. On both sides of this vestibule are rooms occupied as offices, and a stairway leads to the basement below, and to the second story. Here is a spacious room appro-

very accurately determined, but the higher valleys of Sussex county must be from 800 to 1,000 feet above the tide.

priated to the Board of Brokers, and to the Chamber of Commerce. On the right of this vestibule is the spacious reading room, which is furnished with the periodicals and daily journals, foreign and domestic, for the use of strangers and citizens. From the third story we ascend to the observatory on the upper section of the cupola. The cupola is 24 feet in diameter. The basement has superior accommodations for the post-office establishment, and offices occupied by brokers, newspapers, &c. For the plan and execution of this admirable building, the city is indebted to Martin E. Thompson, architect.

Masonic Hall.—This recently erected building is situate in Broadway, and nearly opposite the city hospital. It is fifty-seven feet front, ninety feet in depth, and three stories high. The front is faced with granite, and the interior, which is divided into several convenient apartments, possesses on the second floor one spacious hall the full size of the edifice, and finished after the rich, florid style of Henry VII.'s chapel. It is the largest hall in the city. Architect, Hugh Reinagle.

Clinton Hall.—This edifice also deserves notice on account of its size, great convenience, and the important objects to which it is appropriated. It was built in 1829. It is located in Beekman street, near the Park. It is 50 feet broad by 100 feet deep, and three stories high, independent of the basement. Clinton Hotel, erected in conjunction with it, presents Clinton Hall as a building nearly 100 feet square. The basement is let for stores. The second story contains a spacious lecture room, and accommodations for the mercantile library, and a reading room. The third story is appropriated to the occasional use of different public bodies. The fourth story is occupied by the National Academy of Design, and Exhibition Gallery of Painting, under the direction of Mr. Dunlap, painter.

The *Record Office*, situate on the left side of the City Hall, deserves notice. This building was originally the jail, but has within the last two years been altered by M. E. Thompson, architect. The style is Grecian, and after the Ionic temple on the Ilissus. It has a full portico at each end, having six columns, and two antæ on the ends of the building. The interior is finished with brick ceilings, in groined arches; and is the only specimen of fire proof building in the city. The whole structure is large and commodious, and well adapted for the purpose intended.

Churches and Places of Public Worship.—By an enumeration recently made, it appears that there are in New York 145 places for public worship, many of which are very neat and commodious, and several of them present edifices that are favourable specimens of architectural taste and beauty. The most remarkable of these is the venerable pile, Trinity Church; St. Paul's, St. Thomas', St. John's, the Church of the Ascension, French du St. Esprit, and St. Patrick's Cathedral. The following is believed to be an accurate account of the various denominations of professing christians, with the number of places of worship belonging to each.

Denominations.	No. of churches or places of worship.
Episcopalian	24
Presbyterian	30
Presbyterian, not connected with the General Assembly	3
Reformed Dutch	15
Do. not connected with Synod	1
Society of Friends	4
Baptists	18
Methodist Episcopal church	13
Protestant and Reformed Methodist	6
Roman Catholics	6
Lutherans	2
Jews' Synagogues	3
Independents	4
Universalists	3
Unitarian	2
Moravian	1

THE PARK AND CITY HALL, NEW YORK.





U. S. CAPITOL, NEW YORK

As it declines from north to south, difference of latitude and of level co-operate in New Jersey, and in a space less than two and a half degrees of latitude

Denominations.	No. of churches or places of worship.
German Reformed	1
United Brethren	1
Mariner's church	1
New Jerusalem chapel	1
City Mission church of the Holy Evangelists	1
Second City Mission	1
Of no regular denomination	4

"The clergy are highly esteemed," says the Rev. Dr. Dwight, (*Travels*), "and are treated with respect. Every thing of a religious character is regarded with becoming reverence by a great proportion of the citizens; and few, even of the licentious, think it proper to behave disrespectfully towards persons or things, to which a religious character is attached. The sale of religious books is probably the most profitable branch of business to book-sellers. In proportion to its size," adds Dr. Dwight, "New York is not improbably a more religious city than any other in the world." Not to dwell upon the particular character of the present order of clergy, who in their lives and doctrines adorn the sacred desk, Livingston, Provost, Rodgers, Mason, Moore, Romaine, and Hobart, will long enjoy a distinguished place in the ecclesiastical annals of the state.

The *New York City Marble Cemetery* is situated in the block of ground between Second and Third street, the Bowery, and Second Avenue. It is 250 feet in length, 83 feet in breadth, and surrounded by a wall of solid marble, 2 feet thick, 22 feet in height, 10 feet under and 12 feet above the surface of the ground, and the top covered with broken glass bottles. Within these walls are placed 156 vaults, in 4 ranges, 2 single and 2 double, and these also are built of solid marble. There is also within these walls a dead house, built of solid marble, and placed on the surface of the ground.

Opposite to this cemetery is the *New York Marble Cemetery*, situated in the adjoining block of ground, between Second and Third street, and First and Second Avenue. It is 450 feet in length, 92 feet in width, and surrounded by a wall of solid marble, 2 feet thick, 22 feet in height, 10 feet under and 12 feet above the surface of the earth. Within these walls are placed 288 vaults, in 6 ranges, the same as in the first cemetery, with all the improvements capable of being made. Each vault has a silver gray stone door, composition hinges and locks, flagged, shelved, and coped with the same kind of stone. Every vault has a tablet of white marble placed on the wall opposite, giving the name of the owner. Both of these cemeteries are incorporated by the state legislature, for the burying the dead for ever, and for no other purpose; free of taxation, judgment, and execution; made personal property, and transferable by stock, the same as bank stock. They are placed on a bed of dry sand, 35 feet above any spring of water, forming a complete dry cispool, free from mould and dampness, which is so usual in vaults built of brick, red, or blue stone.

The diversified forms which the decay of the human body after death assumes, seem to be no less numerous than the immense variety of causes by which life becomes extinct. The evidence of this assertion may be witnessed by any one who will enter a vault containing many bodies deposited therein at different periods, more or less remote, and observe the materials with which he is surrounded: season, age, the character of disease, protracted illness, sudden death, &c., will all exercise a greater or less influence in facilitating or in retarding decomposition. The deceased subject by marasmus will longer retain its constituents than one occasioned by dropsy, for "water is a sore decayer of the dead body." If these positions be correct, we may account for the extraordinary preservation of bodies in these cemeteries, by advertising to the dry soil they occupy, their structure of limestone, &c., and the admirable manner in which they are built. Hence they possess advantages which are denied to vaults in the structure of which similar precautions have not been observed. In reflecting upon the manner in which the marble cemetery seems to cherish

a very remarkable change of climate is perceptible. The level sandy plains of the southern extreme approximate to the temperate of eastern Virginia, and

the lineaments of our mortal remains, one feels inclined to adopt the language of old Jeremy Taylor: "after all, our vaults are our longest and sincerest mourners." The marble cemeteries were projected through the enterprise of Perkins Nicols.

American Bible Society.—This institution was founded in May, 1816, and has most assiduously directed its energies to the objects of its formation. It has a board of thirty-six managers, all laymen, from several religious denominations. The society has upwards of six hundred auxiliaries scattered through every state and territory in the union, and the number is continually increasing. The number of Bibles and Testaments issued from its formation to the anniversary in May, 1834, was 1,644,500. In May, 1829, the society resolved, in case means were furnished in season, to supply every destitute family in the United States with a copy of the Bible within two years. According to a report made to the society in 1834, there had been printed 149,375 copies of Bibles and Testaments during the past year, the larger part being Testaments in English and modern Greek. The Bible has been issued by this society in various languages: as the English, French, Spanish, German, Welsh, Irish, and Gaelic. The Testament, in the foregoing languages, and in the modern Greek, and Dutch: the Gospels and Epistles, in the Indian language. The receipts of this association for the year ending May, 1834, were upwards of eighty-eight thousand dollars: the expenditures nearly to a fraction the same.

American Tract Society.—Next in importance, the Tract Society is to be recorded. It is a recent foundation most liberally sustained. It is estimated that the average issue of tracts is about one hundred thousand, or one million of pages weekly. It has numerous auxiliary societies. The whole number of the society's distinct publications is about eight hundred, many of them volumes of considerable size. The number of tracts published by this association during the year 1830-1, on the subject of temperance, was five hundred and sixteen thousand.

As connected with moral and religious instruction, many other institutions for the benefit of the rising generation flourish in this city. The names only of a part can be here enumerated. The American Sunday School Union; the New York Sunday School Union; the Bible and Common Prayer Book Society; the New York Protestant Episcopal Tract Society; the Colonization Society of the city of New York; the American Home Missionary Society; the General Protestant Episcopal Sunday School Union Society; the New York Protestant Episcopal Press; the New York Protestant Episcopal Missionary Society; the New York Manumission Society; Society for the Reformation of Juvenile Delinquents, and several Temperance Societies.

During the past year, an association of much promise has been organized under the presidency of the Hon. Gideon Lee, Mayor of the city, called the Society for the Promotion of Knowledge and Industry.

The *Book-Concern of the Methodist Episcopal Church* is located in the city of New York, with a branch at Cincinnati, Ohio. The business is conducted in a commodious building lately erected in Mulberry street, on a plan designed for extensive additions hereafter, which, when completed, will probably be the largest publishing establishment in the United States, as it now is in the city of its location. There are at present (1832) thirty presses in full operation, one of which being a power-press is equal to five common presses; and constant employment is furnished to above two hundred persons in the various departments of printing, binding, folding, &c.

In connexion with this book-concern, is transacted the business of the Bible, Tract and Sunday School Union Societies of the Methodist Episcopal Church, auxiliaries and branches of which are numerous throughout the United States and territories, and all supplied with books from this source, or from the branch at Cincinnati. From this press is issued weekly "the Christian Advocate and Journal, and Zion's Herald," a religious paper, having upwards of twenty-seven thousand subscribers.

admit the cultivation of cotton, whilst the seasons of Warren and Sussex counties resemble those of Vermont and New Hampshire. This state has the two

Of the numerous works here issued, a large proportion are stereotyped, and the profits of the establishment, after defraying the expenses of its management, are wholly devoted to religious and charitable uses.

Literary Institutions.—The literary institutions of New York are numerous, but for the most part in their infancy. By far the most venerable and important is Columbia College, founded by charter in 1754, under the name of King's College, partly by the munificence of the corporation of Trinity Church, and partly by the British Society for the Promotion of the Gospel in foreign parts. During the interval which elapsed between the years 1776 and 1784, the business of instruction was necessarily suspended in consequence of the trials of the revolutionary contest, and the college edifice appropriated to the purpose of a military hospital. Upon the restoration of public tranquillity, certain individuals were appointed by an act of the legislature, dated May 1, 1784, to superintend the general interests of education throughout the state, under the title of Regents of the University, whose number was subsequently increased by an act passed 26th November in the same year. By this body the duties of trustees of the college were also discharged, until the year 1787. On the 13th of April, 1787, an act was passed by which the original charter of the college was confirmed, the name of the institution altered to Columbia College, and its direction confided to certain persons mentioned in said act, who were authorized by the provisions of the same to discharge the duties of trustees of the college, and were empowered, for the time to come, to fill all vacancies which might occur in this number by death, resignation or otherwise, after it should be diminished to twenty-four. The government of the college has continued to be exercised in conformity with this act since that time.

Columbia College is liberally endowed, possessing property to the amount of nearly half a million of dollars. It was formerly composed of a Faculty of Arts and a Faculty of Physic. The latter was abolished in 1813. The Faculty of Arts consists at present of a professorship of Moral and Intellectual Philosophy, Rhetoric, Belles Letters and Political Economy; a professorship of Greek and Latin Languages, a Jay professorship of the same, a professorship of Natural and Experimental Philosophy and Chemistry, a professorship of Mathematics, Analytical Mechanics, and Physical Astronomy. Certain branches of instruction and the general superintendence of the college are committed to the charge of the president of the college, who is chosen by the trustees. The number of students is generally about one hundred and thirty. There are two literary societies connected with the college, composed of under graduates, the Philoloxian and Peithologian societies, and a grammar school recently organized, containing upwards of two hundred students, subject to the government of the trustees of the college.

The number of graduates of Columbia College since its foundation is about eleven hundred; many of whom have been eminent in the service of the church and state. In no other college in the union, are the requisites of candidates for admission as students of the respective classes so high, and in none are the several courses of studies more extensively or critically taught, particularly in the classical and mathematical departments. While reflecting on the capabilities and doings of this college, one may equally marvel that the number of its students has for so many years remained stationary, as at the unmerited success of some greatly inferior institutions.

Columbia College possesses an excellent library of about four thousand five hundred volumes, and which has been recently enriched by a large donation of philosophical works, the gift of Dr. Hosack. This institution enjoys an admirable location in a commanding part of the city: it is one of the finest specimens of architecture in New York.

University of the City of New York.—This is the name of a college recently projected by a number of gentlemen of New York, and designed to embrace a more extensive system of literature and science than any heretofore established. A literary convention was held in the city in October, 1829, with a view to its formation;

large and increasing cities of New York and Philadelphia on its borders; and, taken in every respect, it may be doubted whether it is not the most advan-

subscriptions to a considerable amount have been already obtained among the citizens for this object; a board of council has been chosen, by whom the Rev. James Matthews, D.D. has been chosen chancellor of the institution. It is declared as a distinctive character of this establishment to enjoy an entire exclusion of all sectarian influence. At this present writing, an edifice of great beauty, and of very considerable extent, is now erecting on the east side of the Washington Parade Ground. It is two hundred feet long, and one hundred feet deep; it is in the castellated Gothic style, four stories on the wings—two in the centre, one of which forms the chapel. It is built of the white marble of Sing Sing. The plan was originally suggested by Major Douglas, of West Point: its architectural disposition by Town, Davis, and Dayton. The whole business of the institution seems to be in a train of successful progress. The several faculties are divided into a Faculty of Letters, a Faculty of Science and the Arts, a Faculty of Law, and a Faculty of Medicine.

The General Theological Seminary of the Protestant Episcopal Church of the United States.—This institution is situated about two miles from the City Hall, on the eastern bank of Hudson river. The block of land on which the seminary is located is an oblong square of eight hundred by one hundred and eighty feet; the present value of which is sixty thousand dollars, and was presented to the seminary by Clement Moore, son of the late Right Rev. Benjamin Moore, D.D.

The present building is one wing of those contemplated, whenever the funds of the institution will enable the trustees to complete the design, and is a spacious stone edifice of Gothic architecture, one hundred and ten feet in length, sixty feet wide, and three stories high. At this seminary (instituted in 1819, partly by the funds of the Episcopal church and partly by a liberal bequest of the late Jacob Sherrerd of this city) about one hundred and forty candidates have been prepared for the ministry. The late Mr. John Kohn of Philadelphia has recently bequeathed to this institution one hundred thousand dollars, on the demise of his widow; at present it relies for support in a great measure on the liberality of the friends of the church. The faculty consists of a Professor of Biblical Learning and the Interpretation of the Scriptures, a Professor of Systematic Divinity, of Oriental and Greek Literature, and also a Professorship of the Nature, Ministry, and Polity of the church. The condition of the institution is most flattering to the interests of theology; and the number of students is rapidly on the increase.

Mercantile Library Association.—This institution was organized in 1821, and occupies appropriate apartments in that substantial, and superior edifice denominated *Clinton Hall*. An elegant lecture room is provided, in which lectures are delivered on several branches of the physical and ethical sciences. The present number of subscribers is fifteen hundred and twenty-five; the library consists of about nine thousand volumes. The annual income derived from various sources, is near three thousand dollars. Active zeal and rigorous enterprise characterize this institution, and no small share of its present flattering condition is owing to the liberality of Philip Hone, late mayor of New York.

General Society of Mechanics and Tradesmen.—This society was incorporated in 1792, and was originally designed for the purpose of affording aid to the widows and children of deceased members which it has effectually done, to a large amount annually. Meeting with flattering support, it established a school for the education of the children of deceased members whose circumstances required their assistance, and subsequently the school was enlarged, so as to accommodate many of the children, both male and female of the more wealthy members, whose attention was attracted to the school by the high character it maintains, and which it yet fully sustains; by this arrangement the tuition fees of those who pay, defray the whole expenses of the establishment. The children are all alike educated, and the distinction, always odious, between those who do and those who do not pay, is unknown in this valuable school. Some years ago the society enlarged the sphere of its

tageously situated of any political subdivision of the republic.

A connexion between the Hudson and Delaware

usefulness, by the establishment of a library, for the exclusive and gratuitous use of the apprentices of mechanics. The library is open every evening, (excepting on Sundays,) and contains about twelve thousand volumes: the number of readers now amount to fifteen hundred. A more spacious building has recently been purchased, which will enable the society to enlarge the school and library, and add thereto reading rooms, for the apprentices of mechanics. The society is conspicuous among the many valuable institutions of New York, and has exercised a large and salutary influence on those for whose immediate benefit it was specially designed. The amount of its property is estimated at seventy-five thousand dollars, and its annual revenue at four thousand five hundred dollars.

MEDICAL.—The nature of the medical profession is such, that its cultivation as a science becomes a duty of vital importance to society; and whenever individuals are congregated to any considerable amount, measures, the offspring of individual efforts or of municipal authority, are adopted to aid in the advancement of the healing art. A careful examination into the lives and services of those who exercised the abilities of the medical profession in this city even at an early date, will show that New York has at all times been favoured with some few in this profession, whose career was a blessing to the state. Long before the establishment of any thing like a medical school, some pupil of Boerhaave, or a well educated physician of a foreign university, might be found among us; and Dubois, Beekman, Dupuy, Magrath, and Farquhar, are often mentioned as conspicuous in their day and generation. Within our time, the faculty has had just reason to boast of no inconsiderable number of individuals, who, by their professional zeal, character, and attainments, have largely contributed to the relief of suffering humanity, or enlarged the resources of the healing art: among these, now deceased, may be enumerated Bayley, Miller, Post, Mitchell, Moore, Rodgers, Borrowe, Stringham, and Kissam. As quackery, however, is always found to prevail, wherever there are knaves and fools to dupe and to be duped, the historian of New York, Smith, has given an early evidence of this species of dishonourable livelihood. As far back as 1753, speaking of this city, he observes, "Quacks abound like locusts in Egypt, and too many have recommended themselves to a full and profitable subsistence;" and notwithstanding numerous and salutary as many of the statutory regulations of this state since that period have been, it can not be denied that there is much room for further legislation, to place the profession of the healing art on a sure and honourable foundation, and to guard against the pernicious encroachments which are still found to prevail on this subject in this metropolis. The establishment of schools of medical learning, on a broad and liberal principle, the avoidance of monopoly in the system of instruction, and the generous cultivation of the profession, as the first of the liberal sciences, are the only means which a wise legislature will countenance and support, in order to secure to the medical character its proper dignity.

The first essay in the United States for the purpose of imparting anatomical knowledge by means of dissection, was made in this city in 1750, by Drs. John Bard and Peter Middleton. The first attempt towards the promotion of a medical school was made in 1768, during the administration of Sir Henry Moore and Lieutenant-Governor Colden; and in the following year it was organized, under the direction of King's College, and Jones, Middletown, Smith, Clossy, Tennent, and Bard, appointed its respective professors. Eminent as several of these individuals were, the prospects of this school were early destroyed by the revolutionary war. In 1783, the regents endeavoured to re-establish this or-

basins is now in progress, by the Morris Canal. The line of it leaves the Delaware at Phillipsburgh, opposite Easton, in Pennsylvania, and is carried over

ganization; but this attempt proved abortive. In 1792 the trustees of Columbia College created another medical faculty in their institution, and appointed distinguished individuals to lecture on the several branches of medical and chirurgical knowledge. This organization lasted until 1813, when it was dissolved by an act of the trustees.

College of Physicians and Surgeons of the University of the State of New York.—In conformity to an act of the legislature passed as early as 1791, the regents of the university exercised the power of establishing this institution, which was chartered on the 12th of March, 1807. In November following, the business of instruction commenced under the most flattering indications of success. In 1810, the rapid progress of the college in its importance and usefulness, received a temporary check, owing to certain difficulties having taken place between the existing president, Dr. Romaine, and the professors, which induced the regents to reorganize the institution in 1811, under the venerable Dr. Bard, as president, to create other professors, and modify the internal government of the school. On the 15th of May, the first medical commencement was held, and the degree of doctor of medicine conferred on eight candidates, a greater number than had at any one time previously received that honour in New York. In September, 1813, the consolidation of the two medical schools of New York took place; i. e. the union of the late Medical Faculty of Columbia College, with the College of Physicians and Surgeons. From this period till 1825, this establishment proceeded successfully with an annual increase in the number of its students, and in its career of utility and reputation. For several years it enumerated above two hundred students, from different and distant parts of the union, in attendance at its winter session of lectures.* An anomalous and ill devised form of government, however, the clashing interests of the trustees and professors, and charges of serious import urged against the teachers, induced the regents to examine into the grounds of accusation; an elaborate report was published by the regents, who declared, after the minutest inquiry, the charges against the faculty groundless, and to have arisen from jealousy and professional rivalry. A motion was made by the honourable the regents to remove the whole board of trustees, but the assumption of vested rights caused them to abandon this wholesome measure. Some modifications in the government of the college, nevertheless, were carried into effect. Broils and contention, however, continued, when, in April, 1826, the professors, wearied with unavailing attempts to silence this opposition, came to the conclusion, that "it would best consist with their own self-respect," to withdraw altogether from the institution, and accordingly they tendered the resignation of their professorships and offices. The board of regents accepted their resignations, April 17th, 1826, and presented them their thanks, "for the faithful and able manner in which they had filled their respective chairs as instructors and lecturers in said college."

On the 7th of July, 1826, at a special meeting of the regents of the university, held at the capitol in Albany, the vacancies caused by the resignation of the late professors, were filled up in the several departments, and John Watts, M. D. appointed president: upon his demise, the regents appointed John Augustine Smith, M. D., &c.

The number of students attending the school, since that period, has varied from one hundred and thirty to one hundred and fifty.

Rutgers Medical College.—This institution was created by the former professors of the College of Physicians and Surgeons, and a commodious and neat edifice erected for the purpose, at an entire cost of upwards of twenty thousand dollars, by the faculty, at their

* Subsequent to the re-organization of the college, in 1811, the business of instruction was performed by the following professors:—*Anatomy*, by Professors Smith and Post; *Chemistry*, by Professors Dewitt and Macneven; *Obstetrics*, by Professors Macneven, Osborn, Hosack, and Francis; *Natural Philosophy*, by Professor Dewitt; *Natural History*, by Professors Dewitt and Mitchell; *Mineralogy*, by Professor Bruce; *Legal*

Medicine, by Professors Stringham and Francis; *Practice of Physic* by Professors Miller and Hosack; *Surgery*, by Professors Smith and Mott; *Materia Medica*, by Professors Bruce, Dewitt, Francis, Macneven, and Mitchell; *Institutes*, by Professors Dewitt, Francis, and Hosack; *Clinical Medicine*, by Professors Miller, Hamersley, and Hosack; *Botany*, by Professor Mitchell.

Warren county, New Jersey, to its extreme north-east angle about thirty miles; thence eastward, through Morris and Essex counties, to the Passaic River, and

own expense. It is located in Duane street, near the New York Hospital. The lecture rooms are three in number, one for chemistry, a large hall for the practice of medicine, obstetrics, and materia medica, on the second floor; and the surgical and anatomical theatre on the third floor. The saloon of practical anatomy, on the fourth floor, is of superior construction, and convenient in its arrangement. The whole building is provided with gas lights, and warmed by a single fire, burned in the basement, from which heated air is conveyed by flues to all parts of the house. This institution was opened for instruction in November, 1826, and honoured by the attendance of one hundred and fifty medical hearers. At four successive sessions of the college, the number of its students continued about the same, and the courses of instruction, with the means of illustration afforded by the chemical laboratory, the anatomical museum, and the cabinet of the professors, secured to its patrons their entire approbation. In consequence, however, of legislative enactments, the labours of this school are at present suspended. It would thus appear that what promised to become a most salutary and efficient means to improve and extend medical learning, has been necessarily abandoned by men who had displayed zeal and abilities adequate to the importance of the occasion, and a liberality in pecuniary appropriations, as rare as it was honourable. Since 1829, the business of medical instruction has been confined exclusively to the state institution, under the direction and patronage of the regents of the university: but this restrictive teaching has done little to advance medical learning; the number of students resorting to New York for instruction in medicine having diminished full half of what it formerly was. The self-gratulatory reflections of the honourable the regents, relative to the high destinies of the College of Physicians and Surgeons, which are contained in the following quotation from their annual report to the legislature, upon the *restrictive* measures which had just been adopted to extinguish the Rutgers College, are perhaps at this day not unmingled with disappointment to that enlightened and avowedly impartial body:—"To such a result it can not be considered as presumptuous to look with confidence, especially since the act lately passed by the legislature, relative to the degree of Doctor of Medicine conferred by colleges without this state, has removed the last remaining obstacle to its march to that eminence to which the state of New York, in consideration of her pre-eminent rank among the other states, ought to elevate her public institutions."—The monopoly of instruction, like other monopolies, seems to be incompatible with the genius of our free institutions.

New York Hospital.—This is one of the noblest and most admirable institutions of this city. The ground upon which it stands is bounded in front by Broadway, in the rear by Church street, Anthony street on the north, and Duane street on the south. The building or buildings occupy an area of about 450 feet in length, and 440 in breadth. Part of this area in front, is at present owned and occupied by individuals, leaving an avenue of about 90 feet, leading from Broadway, which is planted with a double row of lofty trees. The site of the hospital is elevated, and about six hundred yards from the Hudson river. The principal edifice, denominated the hospital, is of gray stone. It extends 136 feet in front, 52 feet in height, 50 feet deep in the centre, and 86 feet deep in the wings, which project on each side. It was originally only two stories high; it is now three above the basement. Its wards accommodate three hundred patients; besides which, there are a theatre for surgical operations, and other apartments for the convenience of the superintendent, apothecary, library, &c.

The charter for this institution was granted by Lord Dunmore, then governor of the province, in 1771, at the instance of Peter Middleton, John Jones, and Samuel Bard, three eminent physicians of this city. Dr. Bard, in particular, may be considered its projector. In 1773, the hospital was burnt down by accident. In 1791, it was reopened for the sick and disabled, and afterwards extended to infirm and friendless seamen. The money arising from private subscriptions having proved inadequate, the legisla-

along the valley of the latter to Newark; leaving that city, it crosses Passaic and Hackensack, and winds through the Bergen Marshes to Jersey city, opposite

ture was induced at various periods to confer grants upon it of the public money. These were increased from time to time, until March, 1806, when an act was passed, authorizing 12,500 dollars per annum to be paid to the institution out of the duties on public executions, till the year 1857. The funds of the institution are also augmented by a tax on seamen's wages, and the members of the corporation pay on their admission forty dollars each.

The government of the hospital is under a Board, consisting of a president, a vice-president, a treasurer, secretary, and twenty-five other members. The Board appoint a visiting committee, and elect the physicians and surgeons annually. Of these, there are four physicians and four surgeons. There is also a house physician, house surgeon, apothecary, &c. There is a large and excellent medical library connected with this institution, embracing nearly four thousand volumes on medicine, surgery, and the auxiliary branches of science; besides a well chosen botanical library, purchased by the Board from Dr. David Hosack.

Asylum for the Insane.—This institution is at Manhattanville, about seven miles from the city; it was built by the government of the New York City Hospital, and is under their immediate care and control. As early as 1808, a building for the accommodation of lunatics was erected on the grounds of the city hospital, capable of accommodating sixty patients. But the inadequacy of this establishment being too clearly evident, the governors of the hospital applied for legislative aid, to enable them to erect the present asylum; and through the instrumentality of the late Thomas Eddy, De Witt Clinton, and others, the liberal appropriation of 10,000 dollars per annum for forty-four years was made in behalf of this benevolent undertaking. The Bloomingdale Asylum is admirably situated, and commands one of the most extensive and interesting views in the United States. The plan of the building is the design of Thomas C. Taylor, Esq. The front view is 415 feet by 180, which includes the wings; the whole is three stories high, exclusive of the basement story, and is intended to contain 250 rooms. The central part is 211 feet in front, by 60 feet deep; it is built of brown hewn stone of excellent appearance, and of the most durable nature. It is not too much to say, that this institution is the first of the kind in the United States, and that New York has worthily displayed her resources in the ample provision she has made for the afflicted inmates of the asylum.

LITERARY AND SCIENTIFIC SOCIETIES.—There are several associations in New York, whose prominent object is the promotion of general and scientific knowledge. The following are the most important.

New York Historical Society.—This association originated from the example of the Massachusetts Historical Society. Its commencement was in 1804, and an act of incorporation was obtained in 1809. Its professed object is to collect and preserve whatever is best calculated to illustrate the natural, civil, political, and ecclesiastical history of the United States, and the state of New York in particular. That the society has not been unmindful of this high trust, its extensive and unique library of ten thousand volumes, embracing materials for the American historian, its cabinet of medals, maps, engravings, and valuable MSS., abundantly evince. It has published several volumes of *Collections*, illustrative chiefly of facts and circumstances in American history. Its most efficient founder was John Pintard. This society has recently obtained an admirable location in Broadway.

Literary and Philosophical Society.—This association originated in 1814, and was incorporated by an act of the legislature the same year. It has published one volume of *Transactions*, quarto which contains among other matters the inaugural discourse of its first president, De Witt Clinton, LL. D. The second volume part first, is enriched with the results of Capt. Sabine's late experiments.

Lycæum of Natural History.—This society was incorporated in 1818. It possesses a valuable cabinet of minerals, an herbarium of great extent, a rich cabinet of zoology, ichthyology, &c. &c. No institution in the state has so ably and so zealously devoted its



CORNER OF THE JASSAIG FALLS.

New York. The Delaware and Raritan Canal, extends from Lambert on the Delaware, below Trenton, to New Brunswick on the Raritan, a distance of

self to the important object of its formation, and its printed transactions, in several volumes, are extensively known and commended. Its most distinguished patron was the late Samuel L. Mitchell, M. D., LL. D., who long held the office of president.

Horticultural Society.—Incorporated in March, 1822. This association has effectively directed its energies to the best means of improving the cultivation of our vegetable productions, and to the acclimation of exotics of an esculent nature. It has acquired a substantial reputation for the services it has rendered horticultural science. A periodical journal under its auspices is published in the city. The society, besides ordinary members, has honorary and corresponding members.

Academy of Arts.—This is the oldest institution of its kind in the United States. It was commenced in 1801. Among those who suggested the plan of the undertaking, and who have zealously patronised it, might be enumerated the names of several gentlemen of the first importance in the state. The property of this association consists of a large collection of fine paintings, among which are a portrait of their former president, Chancellor Livingston, and a full length portrait of Benjamin West, painted by Lawrence, a large collection of antiques, statues, busts, bass-reliefs and a library of books on the fine arts. Besides these treasures, the society possesses a copy of the engravings and views of Piranesi, in twenty-four superb volumes, presented to the Academy by Napoleon. The accommodations of the institution are well calculated for the purposes of its exhibition, and are situate in Barclay street, near the Park. The members are divided into academicians and associates: the former must be artists by profession. The venerable historical painter, John Trumbull, Esq. is the present president.

National Academy of the Arts of Design.—The enterprise of a number of young gentlemen, artists and amateurs, gave origin to this association. It was organized in 1826, and opened its first exhibition in a private room in Broadway. They have recently been accommodated with suitable apartments in Clinton Hall. None but the productions of living artists are admitted for exhibition. The objects of the society, as announced by them, are the mutual improvement of its members, and the instruction of all others who wish to become students of the arts of design. To secure these intentions, lectures are delivered, and apparatus and models furnished to the pupil.

New York Society Library.—The beginning of this society may be dated back as far as 1729; it is the oldest and most valuable library in the state, and contains upwards of twenty-five thousand volumes on the various subjects of general literature, theology, history, law, medicine, political economy, &c. &c. The building which it occupies is situate in Nassau street, opposite the middle Reformed Dutch Church. It is supported by the annual subscription of its members.

The Athenæum.—This is a recent establishment, which was formed in 1824. Its objects are to sustain a library and reading room, to maintain lectures on various branches of general literature and science, &c.

Medical Society of the City and County of New York.—This is an institution created in conformity to a law of the legislature, passed in 1806, organizing medical societies throughout the different counties of the state.

Charities.—No city in the union, perhaps none of its size in the world, can claim a greater number of efficient charitable institutions than the city of New York. Her paupers, embracing a large body of emigrants from the shores of Europe, find the hand of christian beneficence liberally opened to them, both in poverty and sickness. To notice at length these numerous institutions, would far exceed the limits assigned to this article. The following enumeration of the principal ones must suffice. The establishment, on a broad and liberal scale, founded and supported by the corporation of the city, denominated the Alms House and Fever Hospital at Bellevue, is delightfully situated on the bank of the East river. The New York Dispensary, incorporated in 1795. The

forty-three miles. It is seven feet deep throughout, and seventy-five feet wide at the water line, and will admit vessels of 100 tons. The water to supply this

Northern Dispensary, incorporated in 1830. The House of Refuge, which combines together the advantages of a prison, a manufactory, and a school on the Lancasterian plan. Two Lying-in Hospitals. The Eye Infirmary. Several Orphan Asylums. The Humane Society, for the resuscitation of persons from suspended animation, and for the aid of imprisoned debtors. The Society for Aged and Indigent Females. The Deaf and Dumb Institution, a noble establishment, incorporated in 1817. The Medical Mansion, built by the munificence of Jacob Lorillard, Esq., though not strictly a charity, deserves also to be noticed. It is designed for the accommodation of invalids generally, and particularly for those who visit the city for the purpose of obtaining the benefit of the advice of the distinguished members of the medical profession, and who can here be accommodated (with or without their families) with suits of furnished rooms, in a spacious building, which is situated in a retired and pleasant part of the city, surrounded by fine pleasure grounds, and in full view of the Hudson river: the inconveniences oftentimes incident to the sick in boarding-houses, led to the establishment of the Medical Mansion, where invalids have the advice and attendance of any physician they may prefer, and are accommodated with apartments and attendance in accordance with their means or wishes. Besides these, there are many Assistance Societies of mechanics and tradesmen, for the relief of poor widows, &c. &c.

School Fund and Common Schools.—The city of New York participates in the munificent fund of the state, appropriated to the advancement of common education. There were, in 1829, eleven public schools; nineteen charity schools; three incorporated schools; and four hundred and thirty-six private schools, at which were educated twenty-two thousand nine hundred and forty-three pupils. Since that time the number has been greatly augmented. At the *Sunday* schools upwards of twelve thousand children are educated. Besides these, there are a number of *infant* schools, at which probably from two to three thousand children under the age of four years are instructed. At the Roman Catholic free schools about thirteen hundred children are educated.

Penitentiary System.—The penitentiary, formerly at Bellevue, is now removed to Blackwell's Island, on which are being erected edifices of great extent. The penitentiary system of New York embraces details far too extensive to allow of adequate notice in this place.

Municipal Government.—This is in the hands of a mayor and two separate councils, the one consisting of the aldermen, the other of the assistant aldermen of the fifteen wards into which the city is divided. The total expense of the city, in 1833, amounted to \$933,829 76 cents.

The following statistical view may with propriety be here given: it is taken from the first report of the Society for Promoting Knowledge and Industry, dated May, 1834.

Paupers, Patients, &c. in New York.

Penitentiary	593
Alms House (adults)	1355
Do. (children)	772
Bellevue Hospital (sick)	238
Do. (maniacs)	177
City Hospital (end of 1833)	1983
Do. (at present)	2034
House of Refuge (end of 1833)	121
Do. (at present)	174
Patients in the City Dispensary: male in door patients	1120
Female in door patients	1620
Male out door do.	5555
Female do. do.	7875

Arrivals of emigrants in the port of New York, in 1828, 19,023; 1829, 16,164; 1830, 30,224; 1831, 31,739; 1832, 48,589; 1833, 41,752.

From the successive reports of the secretary of state, the following facts are derived:—The number of paupers supported in the

canal is conducted by a navigable feeder five feet deep, and fifty feet wide at the water line, extending from Eagle Islands on the Delaware, to its junction with the main canal at Trenton, twenty-four miles.

state, both in door and out door, were, in 1830, 15,506; 1831, 15,564; 1832, 34,094; 1833, 35,777. In the city of New York, in 1831, 9,627; 1832, 22,909; 1833, 22,584. This great increase is probably owing to the different manner of calculating—in one the number of families is stated—in the other, the number of individuals.

The expense to the state, was, in 1830, \$216,535; 1831, \$245,433; 1832, \$267,767; 1833, \$295,239. The expense to the city was, in 1831, \$86,597; 1832, \$98,223; 1833, \$92,040.

The estimated value of buildings, &c. in 1833, in the state, was \$865,770; in the city, \$550,000. Adding to expense in the state, in 1833, \$295,239, six per cent. on the value of buildings, &c. \$52,046, it makes the actual expense to the state amount to \$346,285. Adding to expense in the city, in 1833, \$92,040, six per cent. on the value of buildings, &c. \$33,000, it makes the actual expense to the city amount to \$125,040.

Courts.—In the city of New York, are holden the sittings of the United States Circuit Court, for the southern district of New York, in April and September. The United States District Court, for the southern district of New York, on the first Tuesday of November. The May term of the New York Supreme Court; and at stated intervals, the sittings of the New York State Court for the county; the Court of Chancery; the Vice Chancellor's Court; the Court of Oyer and Terminer; the New York Superior Court; the Court of Common Pleas; the Court of Sessions; the Marine Court; the public court, and the several justices' courts.

"The police of New York," says Dr. Dwight, "has become, I suspect, superior to that of any other city in the American union. The order maintained here is in a sense absolute. Law reigns with an entire control; and resistance to it is unthought of." It has been justly observed, that the ancient government of the city, while it was the metropolis of a province, was energetic and exact, and the original inhabitants, as well those who returned after the revolutionary war as those who, during its continuance, resided here, were, says Dwight, so habituated to such a government, "that most of them, particularly men of extensive influence, were unwilling to see any other substituted in its place." Samuel Jones is universally called the father of the New York bar, and the legal profession, ever since his time, has enjoyed a pre-eminent rank and importance. Among the most distinguished, now deceased, who have ennobled juridical science, at the New York courts, are, Hamilton, Harrison, Livingston, Wells, and Emmet. The municipal courts have also well sustained their early reputation. The mayors, Varick, Clinton, and Colden, were, in their day and generation, "a terror to evil doers."

Public Amusements.—There are three theatres in the city, the Park theatre, the American theatre, and the Richmond Hill theatre. The two former are large and magnificent buildings. At an early period, theatricals seem to have met with great encouragement in New York, but the reader is referred to the *History of the American Stage*, by William Dunlap, Esq., for minute details. There are two museums; the American Museum, founded by the late John Scudder, in 1809, and Peale's Museum, of a recent establishment. Several public gardens are places of great resort during the heat of summer. The introduction of the Italian opera in the city in 1825-6, under the direction of the Garcia troupe, constitutes an important era in the public recreations of New York; since which period, a correct taste for music has rapidly spread, and the pretensions of the English song have yielded to the claims of the sublime strains of Mozart and Rossini. An Italian Opera House has lately been built at the corner of Leonard and Church streets. This is an elegant building, and covers a space of 99 feet front and rear, by 150 feet deep.

Periodical Literature.—The following detail exhibits a laudable zeal in this species of literature. There are twelve daily newspapers; nine semi-weekly; and about thirty weekly papers. Of these, one is in the French language, two in the Spanish, and one

in the Spanish, French, and Italian. It is estimated that ten millions of sheets are annually issued by the news presses. About twenty monthly periodicals are published, some of extensive circulation. The *New York Mirror*, a weekly publication, issues nine thousand.

Many periodical journals of a monthly character, devoted either to literature or science, or theology, have at different periods been published in New York. The following list embraces the more conspicuous of them. The *New York Magazine*. The *New York Medical Repository*. The *United States Magazine and Review*. The *New York Medical and Physical Journal*. The *American Review*. The *American Medical and Philosophical Register*. The *Literary and Scientific Repository*. The *Churchman's Magazine*. The *New York Medical Journal*. The *New York Recorder*, &c.

The *Boston News-Letter*, in 1704, is familiarly known to have been the first newspaper published in America. William Bradford, the government printer, established a printing press in New York in 1693. Moll (or Oldmixon, edition of 1708) observes, there is a printing press in this town: and Thomas (*History of Printing*), remarks, that no press was established under the Dutch government. Bradford's first book from his press, was a small folio volume of the laws of the colony, bearing the date of 1693. A file of Bradford's paper, for many years under the name of the *New York Weekly Gazette*, 1720, &c. is in the possession of the New York Historical Society. Zenger, not many years after, 1734, published his *Weekly Journal*.

It has been tauntingly observed, that our national literature is newspapers: there may be some ground for the remark: the newspaper press is endeared to the feelings of Americans by the strongest considerations of patriotism. Franklin, the Apostle of liberty, more than a century ago, while in the humble occupation of a journeyman printer, at Boston, wrote and published animadversions on the legislative enactments of Great Britain relative to the colonies, which, though they appeared in the unassuming columns of a weekly paper, awakened the attention of British statesmen. The free strictures on the administration of Governor Crosby and his council, printed in the *Weekly Journal* of the city of New York, by John Peter Zenger, roused the energies of a whole people; and; to use the language of the late Gouverneur Morris, adopted in a conversation with the writer of this article, "the trial of Zenger, in 1735, was the germ of American freedom—the morning star of that liberty, which subsequently revolutionized America." The "*Common Sense*" of Paine first appeared in the columns of a newspaper, during the days of peril "that tried mens' souls:" and the philosophical exposition and defence of the constitution and the union, which Hamilton, Jay, and Madison, published, under the title of the *Federalist*, was first submitted to the people through the pages of a gazette. The literary capabilities evinced in this species of periodical writing, is honourable to the city of New York.

Mortality.—The city of New York may be classed among the most healthy of its size in the world. As no register of births, however, is preserved, one important item is wanting in estimating its comparative salubrity. Its apparent average mortality, greater than that of some of its sister cities, is to be referred to the number of emigrants who resort to this great emporium. The characteristic feature of a large proportion of the most prevalent disorders is inflammatory; hence, the immense outlet of human life by pulmonary consumption: and the number of still-born cases is supposed to have much increased of late years by the injudicious use of the secale cornutum, or ergot. The deaths from the drinking of cold water in some summers of great solar heat, serves to enlarge the bills of mortality. This was particularly the case in the ardent season of 1825; and in that of 1834. The yellow fever has been less frequent in its recurrence than formerly. This, by some, is attributed to the improved state of our domestic policy, and by others

yield a large revenue when the works shall be completed. The most important of these enterprises is the Camden and Amboy rail-road, the charter of which was granted in 1829, and which is to extend from Amboy to Camden, a distance of sixty-one miles. The part of this rail-road which extends from Amboy to Bordentown, thirty-four miles in length, with a deviation of only three quarters of a mile in the whole distance from a right line, was expected to be completed in November, 1831; and the other part, from Bordentown to Camden, a distance of twenty-seven miles, to be finished early in the summer of 1832.—This will render it practicable to go from New York to Philadelphia, (100 miles,) and return the same day. The Paterson and Hudson River rail-road extends from Paterson to Jersey city, a distance of fourteen miles. The other two rail-roads for which charters have been granted, are the Elizabethtown and Somerville rail-road, and the West Jersey rail-road; but the

to a more judicious system of quarantine regulations. The first record of this formidable disorder is that of its appearance in New York in 1702, under the name of the great mortality: it was considered by Smith, the historian, as having been brought from the West Indies: it appeared again in 1742, according to Colden, and some notice was given by Adoms of its ravages in this city, again in 1791. The visitations of this disease have been, since 1795, in the years 1797, 1798, 1801, 1803, 1805, 1819, and 1822. The controversy involving the specific character and contagious and non-contagious nature of this disease, has elicited much talent from the faculty on both sides of the question, though not without occasionally betraying too much asperity. The most ample accounts of this fever are those by Bayley, Miller, and Hosack, and that of the disease of 1822 by P. S. Townsend, M. D.—In 1832 the cholera asphyxia, or Asiatic cholera, appeared in the city of New York. The disorder exhibited a train of formidable symptoms novel to nearly all who encountered it; and was regarded as a *nova pestis* by the most experienced and enlightened prescribers. Nearly five thousand of the inhabitants fell victims to it, notwithstanding the intrepidity with which it was combatted. And now, at this present writing, (August, 1834,) the same pestilence, characterized by the same venom, is again prevalent. The number of its cases, is however, few, compared with that of the season of 1832.

The average temperature of New York throughout the year is stated at 55° of Fahrenheit. In winter the thermometer is rarely lower than 15° or 20° below the freezing point; sometimes the mercury falls to zero, and it has been observed at two, three, four, or six degrees below it. Most unquestionably the nearness of the Atlantic and the gulf stream, conduce to abate the severity of the winter. Snow is not of frequent occurrence, and rarely continues on the ground more than ten or twelve days at a time. The winter closes about the 10th or 15th of March. The temperature of the summer is rarely higher than 80° or 84°; there are a few days in which the thermometer ranges between 90° and 96°, but this heat is of short continuance, as the evening sea breezes cause a great abatement of it at night. There are not a few sudden changes in temperature, both in summer and winter. The greatest change yet noticed in New York took place in August, 1809, when by the sudden coming-on of a northwest storm of rain, the thermometer evinced a difference of forty degrees within the course of fifty-six minutes. But this is no fair sample of the general character of the sudden vicissitudes of the weather. The prevailing winds in summer are from the south and southwest, in winter from the north and northeast and northwest.

The annual average of deaths is stated, by Villermé, at Paris,

construction of them has not yet been begun. A rail-road has been commenced, and we believe is nearly completed to Trenton.

New Jersey abounds in staples, composed of every product of its fields, woods, mines, fisheries, and manufactories. Its manufactures are extensive and thriving. Iron is one of the principal. In July, 1825, there were at Paterson twelve cotton mills in operation, moving 22,000 spindles; three woollen factories, two duck factories, &c. In Trenton, also, there are manufactories of cotton and woollen goods. In Trenton, Newark, and Elizabethtown, are many valuable tanneries. Shoes are made in great numbers at Newark. Almost all the foreign goods consumed in this state are imported at New York and Philadelphia, and the produce of the state is principally carried to those cities for exportation.

The College of New Jersey, at Princeton, was founded in 1738, and has always been one of the

as 1 to 32 6-20ths. In London it has been put down as 1 to 38 or 40. In Glasgow, as 1 to 44. The annual mortality at Naples is reported as 1 to 23 1-4. In the whole United States it has been published as 1 to 40. In the healthiest districts of the United States, as 1 to 56; and in the most unhealthy, as 1 to 35. This calculation is not probably so favourable as a more accurate examination of facts would authorize. In New York, it may be set down as 1 to 39 1-2. Notwithstanding the speculations of many ingenious writers, as Williamson, Volney, Niesset, &c. there is not much reason to suppose, that our seasons have become much milder, or are in any particular manner ameliorated; and the recent elaborate investigation of Arago seems to render such a flattering speculation altogether hypothetical.

This assertion seems corroborated by the various accounts that have been published of the weather during the winter of 1831-2, in various parts of the United States. According to some, this winter has been colder than ever before within the memory of man. In Georgia and Tennessee the mercury was at zero; in Washington, 5- or 6° below; and in Augusta, Maine, 26° below zero. The city of New York also furnished repeated examples of severe cold during the same season. Similar observations are justifiable of the season of 1833-4.

The number of deaths in New York, as reported by the city inspector, was as follows:—in 1826, 4,973; in 1827, 5,181; in 1828, 5,181; in 1829, 5,094; in 1830, 5,537; in 1831, 6,363; in 1832, 10,390; * in 1833, 5,746.

Character.—The multitudinous population of this city presents an endless variety in manners and character. A liberality of feeling and unaffected hospitality have been the result. Active industry and enterprise (often bordering on rashness) are the prevailing characteristics of all classes. Amidst a strong devotion to wealth, it is gratifying to perceive that an attention to higher objects has not been overlooked. Her public school system, her Lancasterian, Sunday, and infant schools, her temperance societies, her innumerable charities, all promise a net reward to their benevolent founders. The respective liberal professions may boast many members of the highest attainments, who tend to diffuse through the various classes of society a proper respect for literature, science, and the elegant arts. This commercial emporium is not unworthy the name by which she is recognised, and may, above all, claim that, whether the avenues to her trade have been closed by legislative restrictions, or during the unprofitable contest of arms, her fidelity to the union has never for a moment been questioned.

J. W. F.

* Augmented by the prevalence of the Cholera-Asphyxia.

most respectable and flourishing literary institutions in the country. In 1820, it had a president, who also instructed in the holy scriptures, the evidences of divine revelation, moral philosophy, and logic; a vice-president, who was also professor of languages and belles lettres; a professor of mathematics and mechanical philosophy; a professor of chemistry, experimental philosophy, and natural history; three tutors, and 121 students. The college library contains about 8,000 volumes; the philosophical apparatus is complete; and the cabinet of mineralogy and natural history is valuable. The college edifice is styled Nassau Hall, in honour of the Prince of Orange. The whole number of alumni of the college, in 1815, was 1,425, of whom 1,023 were then living.—A Theological Seminary was established at Princeton, in 1821, under the direction of the general assembly of the Presbyterian church. It has two professors,—one of didactic and polemic theology, the other of ecclesiastical history. The edifice for the accommodation of the institution, is an elegant stone building, 150 feet by fifty, four stories high, and contains rooms for 100 students. The term of study is three years. The number of students, in 1821, was seventy-three.—Queen's College was established in New Brunswick by the ministers of the Dutch reformed church, for the education of their clergy, and incorporated in 1770. In 1810, a Theological Seminary was established in the city by the general synod of the reformed Dutch churches, and, to a certain extent, connected with the college. The exercises of Queen's College, which had been suspended for several years, were revived in the autumn of 1825,

under very favourable auspices. This state possesses a school fund which yields an annual income of about 22,000 dollars, and, by a law passed in 1829, the sum of 20,000 dollars was appropriated to be annually distributed in small sums to such towns as would voluntarily raise an equal sum for the support of schools. At a public meeting of the friends of education, in 1828, a committee was appointed to procure and publish information relating to the condition of schools. From the statements published by this committee, it appears that, in the whole state, 11,742 children were entirely destitute of instruction, and that about 15,000 adults were unable to read. In many towns, more than half of the children never attended school. In Sussex and Warren counties, forty-nine districts were destitute of schools; and in the rich and flourishing county of Essex, 1,200 children were destitute of instruction. Among the families visited by the agent of the bible society, eighteen were found in which none of the members could read. The system of instruction in the schools which are supported, is stated to be very defective, owing in many instances, to the want of well qualified teachers. It is gratifying to see that the friends of education are engaged in efforts to change this state of things.

The Presbyterians have 85 churches, 88 ministers, 20 licentiates, and 12,519 communicants; the Methodists, 10,730 members; the Dutch Reformed, 28 churches and 28 ministers; the Baptists, 34 churches, 21 ministers, and 2,324 communicants; the Episcopalians, 20 ministers; the Friends are numerous, and there are some Congregationalists.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Distance.	
				T.*	W.†
Bergen, N. E.	18,178	22,414	Hackensack	63	229
Burlington, M.	28,822	31,066	Mount Holly	21	156
Cape May, S. E.	4,265	4,945	Cape May, C. H.	102	204
Cumberland, S.	12,668	14,091	Bridgetown	69	175
Essex, N. M.	30,793	41,928	Newark	49	215
Gloucester, S. M.	23,039	28,431	Woodbury	39	145
Hunterdon, W. M.	28,604	31,066	† TRENTON		166
Middlesex, M.	21,470	23,157	† Flemington	23	182
Monmouth, E.	25,038	29,233	New Brunswick	27	193
Morris, N. M.	21,368	23,580	Freehold	36	201
Salem, S. W.	14,022	14,155	Morristown	55	221
Somerset, M.	16,506	17,689	Salem	65	171
Sussex, N. W.	32,752	20,349	Somerville	33	199
Warren N. W.		18,634	Newton	70	228
			Belvidere	54	210
Total	277,575	320,779, of whom 2,446 are slaves.			

* From Trenton

† From Washington.

POPULATION AT DIFFERENT PERIODS.

Population.		Increase.		Slaves.
In 1790,	184,139			11,423
1800,	211,149	From 1790 to 1800,	27,010	12,423
1810,	245,562	1800	1810,	34,413
1820,	277,575	1810	1820,	32,013
1830,	320,779	1820	1830,	42,204

Population of East and West Jersey in 1701, 15,000; in 1749 60,000.

POPULATION OF THE PRINCIPAL TOWNS IN 1830.

Newark	10,953	Paterson	7,731	Elizabethtown	3,451
New Brunswick	7,831	Trenton	3,925		

Trenton, the seat of government, is on Delaware River, at the falls, thirty miles northeast of Philadelphia, and sixty southwest of New York. At the foot of the falls, there is an elegant bridge over the Delaware, 1,100 feet long and thirty-six wide. Steam-boats ply regularly between Trenton and Philadelphia. New Brunswick is on the Raritan, thirty-three miles southwest of New York. Half the inhabitants are of Dutch origin. Steam-boats ply regularly between this city and New York. Princeton is a pleasant village, eleven miles northeast of Trenton, and sixteen southwest of New Brunswick. Newark is pleasantly situated near the west bank of the Passaic River, two or three miles from its mouth. In this and the adjoining town of Orange, there are valuable quarries of stone for building, and numerous tanneries. Elizabethtown is pleasantly situated on Elizabethtown Creek, which empties itself into Staten Island Sound. Vessels of twenty or thirty tons come up to the town, and those of 200 or 300 tons come as far as Elizabethtown Point, at the mouth of the creek, two miles distant. A steam-boat plies between the city of New York and Elizabethtown Point. Burlington is on Delaware River, opposite Bristol, eleven miles below Trenton. Perth Amboy is on a point of land, at the union of Raritan River with Arthur Kull Sound. It has one of the best harbours on the continent.

The history of this state was written by Smith; and a late and valuable work, embracing a concise history, with an extensive gazetteer, by Mr. Gordon.

PENNSYLVANIA.

THIS important state occupies from the 74° of west longitude, to more than half the 81°, and from 39° 43' of north latitude, to 42°: which gives a length of 307 miles, and a breadth of 190. Mr. Darby states the square miles to be 47,000, or 29,935,200 acres.

It may be doubted whether a more widely diversified region exists on the face of the earth than Pennsylvania, or one of similar area on which the

vegetable and mineral productions are more numerous. In a state of nature, the streams of this state flowed through a dense forest. No part of Pennsylvania is level, and in respect to surface it is divisible into three natural sections: first, a small but important hilly tract between the marine alluvium and the lower ridges of the Apalachian system; second, the mountainous, or middle section; and third, the western hilly. The subjoined tabular view presents the respective area of these sections, and their population according to the census of 1820.

Sections.	Square Miles.	Aggregate Population.	Population to the square mile.
Eastern	7,869	569,355	77
Middle or mountainous	25,189	260,506	10
Western	13,942	219,597	16 1-2
	47,000	1,048,458	22

From political causes the great body of the population has spread over the eastern, southern, and western borders, and left the central and northern a comparative wilderness.

The difference of level in Pennsylvania, if the mountain plateaus are included, is about 1200 feet, or an equivalent to three-degrees of latitude; so that extremes of temperature over the state extend to about 5°. Pennsylvania is emphatically a country congenial to wheat, meadow grass, and the apple; but it admits a wide diversity of other vegetable productions. Except rice, it embraces the whole list of cerealia cultivated in the United States; and amongst fruits, besides the apple, peaches, pears, and plums abound. Of indigenous forest trees this state yields as great a variety as is to be found on the globe in a zone two degrees and one third wide, and not quite six degrees in length. The terebinthine forests are in great part confined to the mountains, and the deciduous trees to the eastern and western sections. In the latter the sugar maple becomes plentiful. The productive soil is in a remarkable manner equally distributed, and some of the most fertile bottoms in the state are included in the mountain section.

This state affords marble of a beautiful variety and excellent texture, which has contributed to adorn the eastern towns, and even the farm houses of the state. Iron and anthracite coal follow marble, and exist in quantities which defy exhaustion. Iron abounds over the whole state; and where the anthracite coal ceases the bituminous commences, and seems to underlie great part of the western, and some of the central portions of it. In the region of bituminous coal, wherever the earth has been penetrated to any great depth, salt water has been found; and salt works, on a large scale, exist on the Conemaugh, and in some other parts of the western section.

Pennsylvania is advantageously situated in respect of navigable rivers. Of these the Delaware on the east, the Susquehanna in the centre, and the Ohio on the west, claim the precedence. Few states in the union have undertaken and executed more in the way of internal navigation; and no other state has such extensive works in actual progress. The Lehigh River, above Easton, to Mauch Chunk or Lehigh coal mines, has been rendered navigable by dams and falling locks. A canal is now in progress from Easton down the Delaware to Bristol; in length about fifty miles. The Schuylkill River has been completely canalised, from tide water at the city of Philadelphia to the extensive coal mines on its sources, upwards of 110 miles. To unite the Schuylkill navigation to that of the Susquehanna, the Union Canal has been constructed, following the valleys of Tulpehocken and Swatara Creeks, from Reading in Berks to Middletown in Dauphin county. The Union is a link in a chain now in progress, for uniting the Susquehanna, Juniata, and Allegany rivers to the city of Pittsburgh. Beside these extended lines, there exists a small but important canal, to pass the rapids or Conewago Falls at York Haven on the Susquehanna; the Conestogo Canal of eighteen miles opens by that creek a navigable channel from the city of Lancaster to the Susquehanna River; and preparations are making to extend a railroad from the city of Philadelphia, by Lancaster, to Columbia, on the Susquehanna.

Pennsylvania ranks high in the variety and extent of her manufactures, some of which are of superior excellence. In 1810, there were sixty-four cotton manufactories, forty-four blast furnaces, six air furnaces, four bloomeries, seventy-eight forges, fifty trip hammers, eighteen rolling and slitting mills, 175 naileries, sixty-four paper mills, eight glass works, thirty-five rope walks, and 108 printing offices. The total amount of the manufactures, embracing 220 articles, was 44,194,740 dollars. Most of the foreign

goods consumed in this state, in Delaware, and the western part of New Jersey, are imported at Philadelphia. Goods to the amount of many millions of dollars are annually transported from Philadelphia to Pittsburgh, and thence distributed through the western country. In 1815, the amount of revenue paid by this state into the national treasury, was 7,142,333 dollars, an amount greater than that of any state except New York. The value of exports from this state, in 1825, was 11,269,981 dollars, of which, 7,333,848 dollars was foreign produce. The imports in the same year, were 15,041,977 dollars.

The University of Pennsylvania, established in Philadelphia, is a very respectable institution, embracing the four departments of arts, medicine, natural science, and law, in each of which lectures are given. There are four professors in the department of arts, five in that of natural science, one in the law department, and seven in the medical department. The latter is one of the most flourishing institutions of the kind in the world, and usually affords instruction to about 500 students from various parts of the United States. This medical institution enjoys a reputation superior to that of any other medical establishment in the United States. Its original projectors were Morgan and Shippen; it soon had the eminent talents of Dr. Rush enlisted in its behalf. This distinguished character long held the most conspicuous place therein as professor of medicine, and imparted instruction to numerous hearers, for a long series of years. Besides Rush, Wistar, Shippen, Dorsey, Physic, Chapman, and B. S. Barton, deserve to be recorded as powerful contributors to the renown which this school possesses. Dickinson College, at Carlisle, is now a very respectable institution. In 1826, the legislature made a grant of 3,000 dollars per annum to aid its funds. Washington College, at Washington, twenty-six miles southwest of Pittsburgh, had, in 1817, a president, two professors, a library, and a philosophical apparatus. Allegany College, at Meadville, was founded in 1815. Jefferson College is situated at Canonsburg, in Washington county; it possesses a medical faculty in the city of Philadelphia. A university has recently been established near Pittsburgh, and endowed by the legislature.

Though Pennsylvania has many literary and benevolent institutions, yet the progress of general education in the state has been slow, and it is still very limited. In the report of the Pennsylvania Society for the Promotion of Public Schools, dated April 28, 1831, it is said, "There is reason to believe that the attention of the citizens is so awakened to the importance of establishing public schools, that the at

tempt will not hereafter fail to be encouraged. The society will recollect, that at their last meeting, [Oct. 11, 1830,] there was read a memorial, proposed to be presented to the legislature, which contained statements relative to the great deficiency in the means of education in various parts of the state, and urged the importance of speedily applying a remedy to this evil." From the memorial alluded to the following extract is made; "There are at least 400,000 children in Pennsylvania between the ages of five and fifteen. Of these, during the past year, there were not 150,000 in all the schools in the state. Many counties, townships, and villages, have been taken indiscriminately from all parts of the state, and been examined by your memorialists, and the average proportion of children educated, in any one year, compared with the entire number of children between the above specified ages, appears to be but one out of three. It is probable that this proportion prevails generally through Pennsylvania, and justifies the assertion, that more than 250,000 children capable of instruction were not within a school during the past

year. Many of these children never go to school at all." In the city and county of Philadelphia, there are ample means for the education of every child, and many thousands have been benefited by them. In that district, and we believe the case is the same in the city of Lancaster, no one need be uneducated, except from choice.

The Presbyterians have 429 churches, 209 ministers, 39 licentiates, and 38,873 communicants; the Methodists, 140 preachers, and 46,390 members; the Baptists, 144 churches, 96 ministers, and 7,561 communicants; the German Reformed Church, 282 churches, and 73 ministers; the Episcopalians, 60 ministers; the Associate Presbyterians, 39 congregations, 18 ministers, and 4,180 communicants; the Evangelical Lutherans, 2 synods; the Dutch Reformed Church, 6 churches and 6 ministers; the Friends are numerous; the United Brethren have about 15 congregations; the Unitarians, 5 congregations and 3 ministers; and there is a considerable number of Roman Catholics, some Universalists, Jews, &c.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

EASTERN DISTRICT.						
Counties.	Population, 1820.	Population, 1830.	County Towns.	Population.	Distance. H.* W.†	
Adams, s.	19,370	21,379	Gettysburgh	1,473	34	76
Berks, s. e.	46,275	53,357	Reading	5,859	52	143
Bucks, s. e.	37,842	45,740	Doyleston	1,262	107	163
Chester, s. e.	44,451	50,908	Bristol	1,262	122	159
Cumberland, s. m.	23,606	29,218	West Chester	1,258	75	115
Delaware, s. e.	14,810	17,361	Carlisle	2,523	18	104
Dauphin, s. e. m.	21,653	25,303	Chester	848	95	121
Franklin, s.	31,692	35,103	HARRISBURGH	4,311		110
Lehigh, e.	18,895	22,266	Chambersburg	2,794	48	90
Lancaster, s. e.	68,366	76,558	Allentown		85	178
Lebanon, s. e. m.	16,988	20,546	Lancaster		35	109
Montgomery, e.	35,793	39,404	Lebanon	7,704	24	134
Northampton, e.	31,765	39,267	Norristown	1,826	88	143
Perry, m.	11,342	14,257	Easton	1,089	101	190
Philadelphia, s. e.	73,295	108,503	New Bloomfield	3,529	36	122
Philadelphia, city	63,802	80,458	Philadelphia	80,458	08	136
Pike, e.	2,894	4,843	Milford		157	249
Schuylkill, e. m.	11,339	20,783	Orwigsburgh	773	59	167
Wayne, n. e.	4,127	7,663	Bethany	327	162	265
York, s.	38,759	42,658	York	4,216	24	87
WESTERN DISTRICT.						
Alleghany, w.	27,673	37,964	Pittsburgh	12,542	201	223
Pittsburgh, city	7,248	12,542	Kittaning	1,620	183	215
Armstrong, w.	10,324	17,625	Beaver	914	229	151
Beaver, w.	15,340	24,206	Bedford	870	105	126
Bedford, s.	20,248	24,536	Towanda		128	239
Bradford, n.	11,554	19,669	Butler	580	203	236
Butler, w.	10,193	14,683	Ebensburgh	270	131	178
Cambria, m.	2,287	7,079	Bellefonte	699	85	192
Centre, m.	13,796	18,765	Clearfield		129	201
Clearfield, m.	2,342	4,803	Danville		65	175
Columbia, e. m.	17,621	20,049	Meadville	1,070	236	297
Crawford, n. w.	9,397	16,005	Erie	1,329	272	333
Erie, n. w.	8,553	16,906				

* From Harrisburgh.

† From Washington.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Population.	Distance.	
					H.*	W.†
Fayette, s. e.	27,285	29,237	Uniontown	1,341	184	193
Greene, s. e.	15,554	18,028	Waynesburg		222	229
Huntingdon, m.	20,144	27,159	Huntingdon		90	148
Indiana, w. m.	8,882	14,251	Indiana	433	157	189
Jefferson, w. m.	561	2,225	Brookville		165	236
Luzerne, e. m.	20,027	27,304	Wilkesbarre	2,233	114	222
Lycoming, m.	13,517	17,637	Williamsport		87	196
M'Kean, n.	728	1,439	Smithport		200	273
Mercer, w.	11,681	19,731	Mercer	656	235	267
Mifflin, m.	16,618	21,529	Lewistown	1,479	55	162
Northumberland, m.	15,424	18,168	Sunbury	1,057	52	162
Potter, n.	186	1,265	Cowdersport		174	283
Somerset, s.	13,974	17,441	Somerset	649	143	165
Susquehanna, n. e.	9,660	16,777	Montrose	415	163	271
Tioga, n.	4,021	9,062	Wellsborough		147	253
Union, m.	18,619	20,749	New Berlin		60	168
Venango, w.	1,976	4,706	Warren		240	313
Warren, n. w.	40,038	42,560	Washington	1,816	212	229
Washington, s. w.	4,915	9,128	Franklin	409	212	279
Westmoreland, s. w.	30,540	38,400	Greensburg	810	170	192

POPULATION OF PENNSYLVANIA† AND PHILADELPHIA AT DIFFERENT PERIODS.

Penn.	Pop.	Increase.		Slaves.	Philadel.	Pop.	Dwellings.
In 1701,	20,000	From 1701 to 1763,	260,000	3,737	In 1731,	12,000	1700, 700
1763,	280,000				1753,	18,000	1749, 2,076
1790,	434,373	1763	1790,	1,706	1790,	42,520	1763, 2,969
1800,	602,545	1790	1800,	795	1800,	70,287	1776, 5,460
1810,	810,091	1800	1810,	211	1810,	96,664	1790, 6,651
1820,	1,049,313	1810	1820,	386	1820,	119,325	1801, 11,200
1830,	1,347,672	1820	1830,		1830,	167,811	1810, 15,814

POPULATION OF PITTSBURGH,‡ LANCASTER, READING, AND HARRISBURGH, AT DIFFERENT PERIODS.

Pittsburgh.		Lancaster.		Reading.		Harrisburgh.	
In 1800,	1,565	In 1800,	4,292	In 1800,	2,385	In 1800,	1,472
1810,	4,768	1810,	5,405	1810,	3,463	1810,	2,289
1820,	7,248	1820,	6,663	1820,	4,332	1820,	2,990
1830,	12,542	1830,	7,704	1830,	5,859	1830,	4,311

Philadelphia stands on the west bank of the river Delaware, five miles from its confluence with the Schuylkill, which forms the western boundary of the city. It was founded in 1682, and incorporated in 1701. The charter being abrogated at the revolution, it remained under a provincial government till 1789, when it was incorporated a second time. Its present population is upwards of 167,000. The city is built in streets of from fifty to 100 feet in width, running parallel and at right angles to each other. They are handsomely paved, and are kept remarkably clean. The houses exhibit an appearance of neatness, uniformity, and commodiousness, and many of them are ornamented with white marble. The Delaware is about a mile wide, and is navigable for ships of a large size. The most conspicuous buildings are the Churches, the State house, the United States and Pennsylvania Banks, and the Institution for the Deaf and Dumb. The bank of the United States was esta-

blished in the year 1816, with a capital of 35,000,000 dollars. The banking house is a splendid structure, built on the plan of the Parthenon at Athens, and is situated in a north and south direction, fronting Chestnut and Library streets, having eight fluted columns, four feet six inches in diameter, embracing the whole front. On each of the fronts is a portico, projecting ten feet six inches. The whole length of the edifice, including the portico, is 161 feet, and its breadth eighty-seven feet. The main entrance is from Chestnut-street, by a flight of six marble steps, extending along the whole front of the portico. The banking room occupies the centre of the building, being forty-eight feet wide, and eighty-one feet long. The whole body of the building is arched in a bomb-proof manner, from the cellar to the roof, which is covered with copper. There are in this city eighty-eight houses for public worship, ten banks, thirteen insurance companies, of which eight are marine, four

* From Harrisburgh. † From Washington.

‡ The population of Pennsylvania, including Delaware, in 1749, is stated in Holmes's Annals, vol. ii. p. 538, and in the American Almanac for 1830, at 250,000; and Martin's London Magazine for 1755-6, states it, at that time, at 250,000. The records of Pennsylvania, for the year 1757, contain the following remark:—

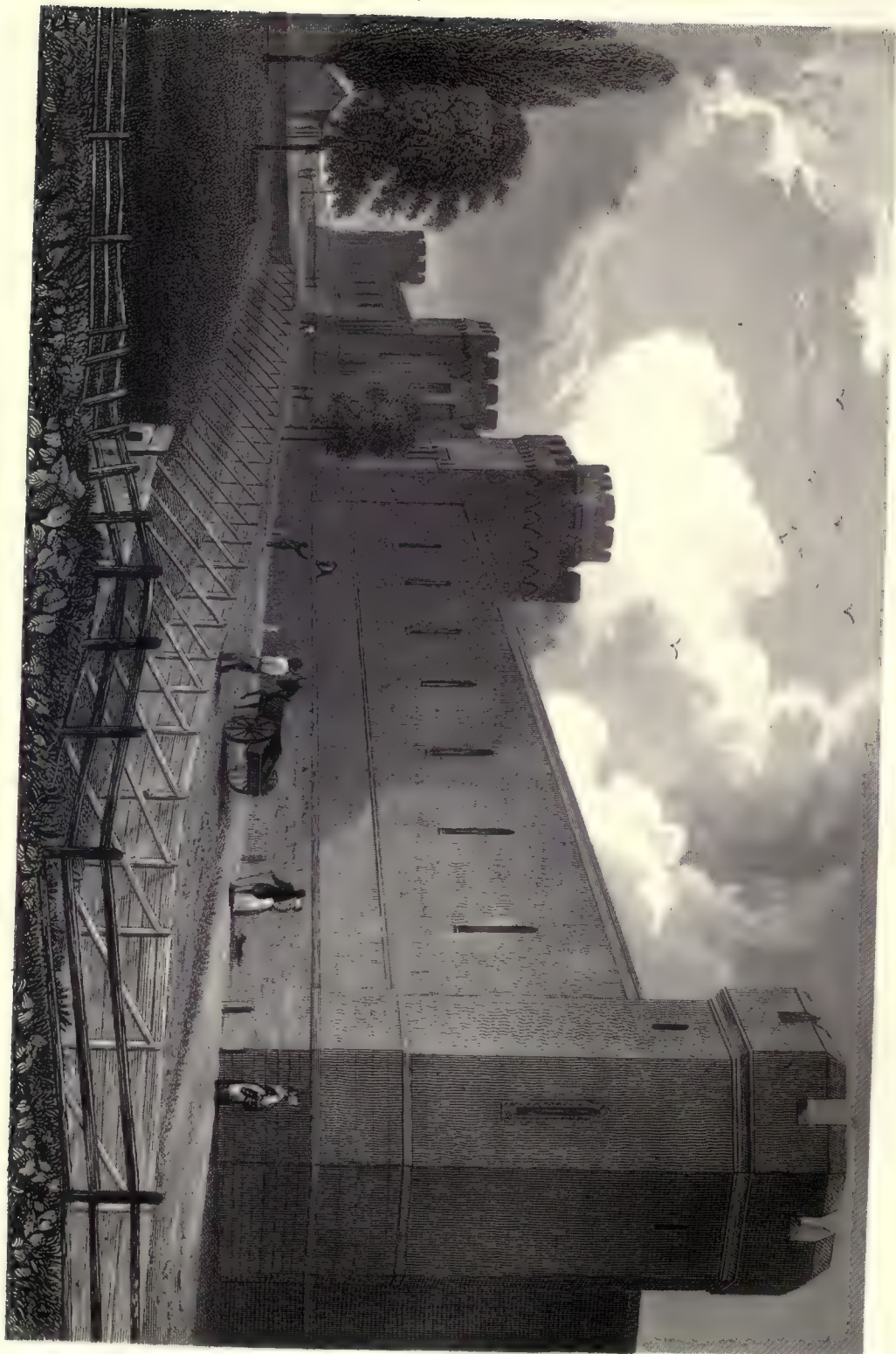
"The inhabitants have never been numbered, but it is believed by good judges, that they amount to 200,000 in the province and counties."—*Hazard's Penn. Register*, vol. v. p. 339.

§ The population of Pittsburgh here given is that of the city only, its population, including the suburbs, or contiguous villages, is upwards of 17,000.





WILLIAM B. BAKER, PUBLISHER, NEW YORK, PEEBLES & CO.,



ПЕННЕНСЛАКЪ, ПЕТЛАО СЛРРЧА.

for fire, and one for lives and annuities, a custom-house, an exchange, and a chamber of commerce.

The State house in which the continental congress sat, and from whence the declaration of independence issued, is still standing. It is in Chestnut-street, built of brick, comprising a centre and two wings, and has undergone no material alteration since its erection. It has a venerable appearance. It is surmounted by a cupola, having a clock, the dial of which is glass, and which is illuminated at night until ten or eleven o'clock, showing the hour and minutes until that time. The front is a considerable distance back from the street, the approach being paved to the curbstone with brick, and two elegant rows of trees extending its whole length. East of the main entrance, in the front room, the sessions of the congress were held, and the question of independence was decided.

The arcade in Philadelphia, like that at New York, has proved a bad speculation: the former is twice the size of the latter, and appears to be more deserted. It contains Peale's Museum, one of the best in the United States, and comprising the most complete skeleton of the Mammoth perhaps in the world. It is perfect, with the exception of a few bones, which have been supplied by imitation. The Academy of Arts, in Chestnut-street, contains a large number of paintings, several of which are the property of Joseph Bonaparte. Among these is one executed by David, representing Napoleon crossing the Alps. Another is a full-length portrait of Joseph himself, as king of Spain.

Of the public works of Philadelphia, there are none of which its inhabitants are more justly proud than those at Fair Mount, by which the city is supplied with water of the best quality, and in the greatest plenty. Fair Mount is in the rear of the city, upon the bank of the Schuylkill, the neighbourhood of which affords some romantic scenery. The reservoirs are situated on the top of a hill rising from the river, a part of it perpendicular rock, to the height of 100 feet. The ascent from the river to the reservoirs is by a flight of substantial wooden steps, with resting places, over one of which is a temple. The reservoirs, which are surrounded with paling, outside of which is a gravelled walk, contain upwards of twelve millions of gallons, supplying the city through between fifteen and twenty miles of pipes. The water was formerly forced to the reservoirs by steam, which is no longer used; it is now raised by machinery propelled by the Schuylkill. The machinery is simple, and is turned by large water wheels, of which there are five, one of them of iron, and twenty-four tons in weight. If all are in motion, they

will raise seven millions of gallons in twenty-four hours. To turn them, the Schuylkill has been dammed its whole breadth, by which the water is thrown back into a reservoir lock, whence it is admitted as required to operate upon the wheels, and is discharged into the river below the dam. The whole expense of these works, including the cost of works abandoned, was 1,783,000 dollars. The water thus circulated through the city, is not only sufficient for every family, but is used to wash the streets. It is of immense service in case of fire, as it is only necessary to screw the hose to hydrants, which are placed at convenient distances, to secure a constant stream of sufficient force to reach any ordinary height.—There is a navy yard on the Delaware.

The New Penitentiary, situated on elevated ground near the city, and nearly completed, is designed to carry the principle of solitary confinement completely into effect. Ten acres of land are occupied for the purpose, forming a square of 650 feet each way, and enclosed by massive walls of granite thirty-five feet high, with towers and battlements. The prison is in the centre of the square, and is admirably calculated for the purposes for which it was designed. The expense already incurred in its erection is 300,000 dollars.

The banks of the Schuylkill near Philadelphia contain many elegant country seats, and several public buildings. Among the private residences, none are perhaps more justly admired than that of Henry Pratt, Esq. on Lemmon Hill. The mansion-house is situated on the eastern bank of the river, and directly above the Fair Mount Water Works, about a mile from the city. Connected with the mansion are gardens of an extensive kind, laid out in a style of much elegance and taste, to which respectable citizens and strangers have free access, and a ride to them is among the various pleasant excursions in the vicinity of the city.

Pittsburgh, in the western part of the state, is very advantageously situated, on a plain between the Alleghany and Monongahela rivers, at the point where they unite to form the Ohio. By means of the Alleghany river and its branches, Pittsburgh has a water communication with the western part of New York; by the Monongahela and a good turnpike-road, it is connected with Baltimore; and by the Ohio it has an easy intercourse with the western states. It is also connected with Philadelphia by an excellent turnpike-road. These advantages have made Pittsburgh the centre of a great trade, and it is estimated that merchandise to the value of 20,000,000 dollars annually passes through the city. The immense supply of

coal in the neighbouring country has given rise to numerous and extensive manufacturing establishments. The population in 1820 was 7248. Harrisburgh, the seat of government, is regularly laid out on the east bank of the Susquehanna, ninety-seven miles west-north-west of Philadelphia. Lancaster, sixty-two miles west of Philadelphia, is advantageously situated in the midst of a fertile and highly cultivated country. Easton is pleasantly situated on the Delaware, at the mouth of the Lehigh, fifty-six miles north of Philadelphia. Reading is a flourishing town on the Schuylkill, fifty-one miles northwest of Philadelphia, inhabited chiefly by Germans, and famous for the manufacture of hats. Wilkesbarre is on the southeast side of the Susquehanna, 119 miles northwest of Philadelphia. Canonsburg, the seat of Jefferson College, is eighteen miles south west of Pittsburgh. Meadville, the seat of Alleghany College, enriched with the great library of the antiquarian, the late Dr. Bentley, is in the northwest part of the state, on French Creek, about forty miles from Lake Erie. Carlisle is sixteen miles west of Harrisburgh. Bethlehem, a Moravian settlement, is on the Lehigh, twelve miles southwest of Easton, and fifty-three north of Philadelphia.

CHAPTER III.

OHIO—INDIANA—ILLINOIS—MISSOURI.

OHIO.

THIS interesting and important state is bounded by Lake Erie and Michigan territory on the north; by Pennsylvania and by the Ohio on the south; and a line separates it from Virginia and Kentucky on the southeast, and from Indiana on the west. Extending from north latitude $38^{\circ} 30'$ to 42° , and from longitude $38^{\circ} 35'$ to $84^{\circ} 47'$ west, its area is 40,000 square miles. The greatest breadth of Ohio is within a fraction of 220 miles; mean breadth about 182 miles.

This state occupies about one third of the plane which declines from Pennsylvania to the Mississippi. Except along the deep vales of the Ohio, and those of other streams near their efflux into that recipient, the climate is as uniform as the surface, and considerably more severe in the winter season than in corresponding latitudes on the Atlantic.

"In a state of nature," says Darby, "Ohio was, with the exception of some central prairies, covered with a dense forest, to which the fertility of the soil

gave a stupendous development. The size, majesty and generic and specific variety of the trees of the Ohio basin has been a just theme of admiration, but I am inclined to consider the picture over-coloured. I spent my early years in the Ohio valley and Mississippi basin alternately, and could never observe any single species of tree common to both, say to Ohio and Louisiana as extremes, which did not reach a height and mass greater in the lower climate of Louisiana." In cultivated vegetables, Ohio is peculiarly productive. Indian corn, wheat, rye, oats, barley, tobacco, and orchard fruits, are staples. Meadows and gardens, where due attention is paid to their improvement, yield abundantly. Of metals, iron is the only ore found in great quantity. Coal of the bituminous species exists in extensive strata along the Ohio and some of its confluent streams, and no doubt underlies other parts of the state, though in a manner too level to be detected, except by artificial means.

The state of Ohio has undertaken the construction of canals, as public works, on a very liberal scale. One of these is the Ohio State Canal, from Cleveland, on Lake Erie, to the Ohio, at the mouth of the Scioto; lockage, 1,185 feet; length of the main line, 306 miles; feeders, fifteen miles; total, 322 miles. Estimated expense, 2,801,000 dollars. The route is from Portsmouth, on the Ohio, (where it is 474 feet above tide level, and ninety-four below Lake Erie,) up the valley of the Scioto, to Pikestown; thence crossing the river to near Chillicothe; thence again crossing the river, it continues along the eastern bank to Big Belly Creek, where it receives a feeder, ten miles long, from the Scioto at Columbus; it then passes up the valley of Walnut Creek to the Licking and Walnut Creek summit, between the head waters of those streams. From the summit it continues down the valley of Licking Creek to Rocky Fork, and thence across the valley to the Tomaka, and down that stream to near its junction with the Muskingum. From this point an ascent commences, and the line passes up the Muskingum Valley to White Woman's Creek; crossing this, it proceeds up the valley of Tuscarawas Fork, first on the western, then on the eastern bank, to a point where its two head waters unite, near the southwest angle of Portage county. This is the centre of the Portage summit, extending ten miles. From the north of the Portage or Akron summit (499 feet above the Ohio at Portsmouth, 973 feet above the Atlantic, 405 above Lake Erie,) it passes down the Cuyahoga Valley, first on the west, afterward on the east side of the river, to within six miles of its mouth at Cleveland, for which

six miles the river channel with a towing-path is to be used.—Miami Canal, forty feet wide at the surface, and four feet in depth, from Cincinnati, on the Ohio, to the Maumee, near the head of Lake Erie, was commenced in 1825. Length of main line, 265 miles; feeders, twenty-five miles; total, 290; lockage, 889 feet; estimated expense, 2,929,957 dollars. The line from Cincinnati to Dayton was completed in 1831. This division embraces twenty-two locks, and length of canal sixty-five miles. The summit level, commencing eighteen miles north of Dayton, extends sixty miles within a single lock. To aid the state in extending this canal to Lake Erie, there is assigned by congress, of the public lands which the same shall pass through, a quantity equal to one half of five sections in width, on each side of the canal between Dayton and the Maumee River at the mouth of the Auglaise, the United States reserving each alternate section; provided this extension be commenced within five years from May, 1828, and finished within twenty; the canal to be a highway for the United States, free from toll.

The principal manufactures are flour and spirits, and woollen and cotton cloth, with family manufactures to a great amount. The number of steam-boats built is great. About 200 are now plying in the western valley. The principal exports are flour, pork, and tobacco; which are carried down the Ohio and Mississippi to New Orleans. Foreign goods are received from the same place by the steam-boats, and from Philadelphia and Baltimore, across the Alleghany Mountains.

Education is pretty generally extended through this state. There is a university at Athens, called the Ohio University; and another at Oxford, called the Miami University. One section, or the thirty-sixth part of every township, has been granted by the government of the United States for the support of schools. Kenyon College, recently founded by the instrumentality of Bishop Chase, has now connected with it a Theological Seminary; the whole

under the charge of the Right Rev. Bishop McIlvaine, President. It is a flourishing institution, and promises largely to contribute the light of science and useful knowledge over a vast extent of country. The studies of Kenyon College are thus stated:—

FRESHMAN CLASS.

Livy, Horace,
Septuagint, Herodotus,
Greek and Roman Antiquities,

Geography and History, (Ancient and Modern.)

SOPHOMORE CLASS.

Cicero, Tusc. Quæ.,
Quintilian, Iliad,
Xenophon, Memorabilia,

Algebra, Mathematics,
Jamieson's Grammar of Rhetoric.

JUNIOR CLASS

Tacitus,
Plato, Thucydides, Demos. pro
Coron.,
Mathematics,

Political Economy,
Rhetoric and Logic, (*Whately*);
Natural Theology,
Chemistry.

SENIOR CLASS.

Natural Philosophy,
Intellectual and Moral Philosophy,
Constitution of the United States,
Butler's Analogy,

Evidences of Christianity,
Mineralogy and Geology,
Cicero de Officiis,
Sophocles Oedip. Tyrant. Euripides, Medea.

During the whole college course, a portion of the Greek Testament will be critically read every week.

There are many incorporated academies in different parts of the state, and a college established at Cincinnati.

The Presbyterians in this state have 346 churches, 192 ministers, 11 licentiates, and 22,150 communicants; the Baptists, 14 associations, 240 churches, 140 ministers, and 8,801 communicants; the Methodists, 91 preachers, and 36,064 members; the Lutherans, 37 ministers, and 8,706 communicants; the Associate Presbyterians, 65 congregations, 20 ministers, and 4,225 communicants; the German Reformed, 82 congregations, and 3,750 communicants; the Episcopalians, 16 ministers; the New Jerusalem Church, 4 societies; there are also a considerable number of Friends and Roman Catholics, and some Universalists, Unitarians, and Shakers.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population, 1830.	Square Miles.	County Towns.	Population.	Distance.	
					C.*	W.†
Adams, s.	12,278	550	West Union	429	101	460
Allen, w. m.	578	542	Wapahkonetta		110	507
Ashtabula, n. e.	14,584	705	Jefferson	270	191	325
Athens, s. e.	9,763	744	Athens	729	73	344
Belmont, e.	28,412	536	St. Clairsville	789	124	275
Brown, s.	17,867	492	Georgetown	325	104	480
Butler, s. w.	27,044	486	Hamilton	1,097	101	488
Champaign, w. m.	12,130	417	Urbana	1,102	50	447
Clark, s. w. m.	13,074	412	Springfield	1,080	43	437
Clermont, s. w.	20,466	515	Batavia	426	109	476

* From Columbus.

† From Washington.

TOPOGRAPHY OF THE UNITED STATES.

Counties.	Population, 1830.	Square Miles.	County Towns.	Population.	Distance. C.* | W.†	
Clinton, S. M.	12,292	400	Wilmington	607	67	444
Columbiana, E.	35,508	865	New Lisbon	1,138	152	282
Coschocton, E. M.	11,162	562	Coschocton	333	84	336
Crawford, N. M.	4,778	584	Bucyrus	298	69	409
Cuyahoga, N. E.	10,360	475	Cleveland	1,076	158	354
Dark, W.	6,203	660	Greenville	160	103	501
Delaware, M.	11,523	610	Delaware	532	23	419
Fairfield, M.	24,788	540	Lancaster	1,530	28	372
Fayette, S. M.	8,180	415	Washington	300	45	422
Franklin, M.	14,766	520	COLUMBUS	2,437		396
Gallia, S.	9,733	495	Gallipolis	755	108	362
Geauga, N. E.	15,813	600	Chardon, township	881	157	332
Green, S. W. M.	15,084	416	Xenia	919	57	453
Guernsey, E. M.	18,036	621	Cambridge	518	83	314
Hardin, W. M.		500	Hardy		66	436
Hamilton, S. W.	52,321	400	Cincinnati	24,831	112	497
Hancock, N. W. M.	813	575	Findlay	52	114	502
Harrison, E.	20,920	450	Cadiz	820	124	278
Henry, N. W.	260	474	Damascus		161	455
Highland, S. M.	16,347	555	Hillsborough	564	74	441
Hocking, S. M.	4,008	432	Logan	97	47	370
Holmes, M.	9,133	400	Millersburgh	319	80	341
Huron, N.	13,345	840	Norwalk	310	113	399
Jackson, S.	5,974	492	Jackson	329	74	387
Jefferson, E.	22,489	400	Steubenville	2,937	149	260
Knox, M.	17,124	610	Mount Vernon	1,021	45	375
Lawrence, S.	5,366	426	Burlington	149	135	405
Licking, M.	20,864	666	Newark	999	34	362
Lorain, N.	5,696	555	Elyria	668	130	377
Logan, W. M.	6,442	425	Belle Fontaine	266	62	458
Madison, M.	6,190	448	London	249	27	423
Marion, M.	6,558	527	Marion	287	47	416
Medina, N. E. M.	7,560	473	Medina, township	622	111	357
Meigs, S. E.	6,159	405	Chester	164	94	343
Mercer, W.	1,110	570	St. Mary's	92	111	508
Miami, W. M.	12,806	444	Troy	504	78	474
Monroe, S. E.	8,770	563	Woodfield	157	140	294
Montgomery, W. M.	24,252	460	Dayton	2,965	66	462
Morgan, S. E.	11,796	500	M'Connellsville	267	70	340
Muskingum, M.	29,325	664	Zanesville	3,094	59	336
Paulding, N. W.	160	432				
Perry, S. M.	14,018	402	Somerset	576	46	354
Pickaway, M.	15,935	495	Circleville	1,136	26	394
Pike, S.	6,024	414	Piketon	271	65	409
Portage, N. E.	18,827	752	Ravenna, township	806	127	320
Preble, W.	16,255	432	Eaton	511	92	468
Putnam, N. M.	230	576	Sugar Grove		148	538
Richland, N. M.	24,007	900	Mansfield	840	71	380
Ross, S. M.	24,053	672	Chillicothe	2,846	45	404
Sandusky, N.	2,851	656	Lower Sandusky	351	103	428
Scioto, S.	8,730	581	Portsmouth	1,064	91	421
Seneca, N. M.	5,148	546	Tiffin	248	85	431
Shelby, W. M.	3,671	418	Sidney	240	86	482
Stark, E. M.	26,784	780	Canton	1,257	116	319
Trumbull, N. E.	26,154	875	Warren	510	157	297
Tuscarawas, E. M.	14,208	654	New Philadelphia	410	107	314
Union, M.	3,192	430	Marysville	142	37	433
Van Wert, N. W.	49	432	Willshire		146	533
Warren, S. W. M.	21,493	400	Lebanon	1,157	83	468
Washington, S. E.	11,731	670	Marietta	1,207	106	304
Wayne, N. M.	23,344	660	Wooster	977	86	347
Williams, N. W.	377	600	Defiance	52	175	511
Wood, N. W.	1,095	744	Perrysburgh	182	135	460
Total	937,679	40,150				

POPULATION OF OHIO AT DIFFERENT PERIODS.

Population.		Increase.	
In 1790, about	3,000		
1800,	45,365	From 1790 to 1800,	43,365
1810,	230,760	1800	1810, 195,395
1820,	581,434	1810	1820, 350,674
1830,	937,637	1820	1830, 356,203

* From Columbus.

CINCINNATI.

Population.	
In 1800,	750
1810,	2,540
1820,	9,642
1826,	16,230
1830,	24,831
1831,	28,014

† From Washington.

Cincinnati, the largest town, is near the southwest corner of the state, on the Ohio, twenty miles above the mouth of the Great Miami. This town was first laid out in 1789, and began to flourish after the year 1794, since which time its growth in population, wealth, and trade, has been exceedingly rapid. It is the emporium of the western country, and, next to New Orleans, much the largest town in the United States west of the Allegany Mountains. It is advantageously and pleasantly situated. It stands partly on the first and partly on the second bank of the river, the upper part being elevated fifty or sixty feet above the lower. The central part of the town is very compact, and a great proportion of the houses are handsomely built of brick. The principal public buildings and institutions in 1829 were a court-house, a jail, the medical college, the Cincinnati College, an hospital, a museum, a city library, the apprentices' library, three market-houses, five insurance companies, twenty-three places of public worship, five classical schools, and forty-seven common schools. There were published, at the same period, two daily newspapers, two semi-weekly, and five weekly, besides other periodicals. In 1826, there belonged to the city twenty-eight clergymen, thirty-four attorneys, and thirty-five physicians. The number of students in the medical college, in 1825, was eighty-two. The Cincinnati College was incorporated in 1819. Cincinnati is a place of great trade and extensive manufactures. The exports, of which the most considerable articles are flour and pork, amounted, in 1826, to 1,063,560 dollars; and the imports, in the same year, to 2,528,590 dollars, a considerable portion of the imports being brought here for re-exportation. There are between thirty and forty manufacturing establishments, some of which are on a very extensive scale; and their works are, to a great extent, moved by steam-power. The whole value of the manufactures, in all the departments, was estimated, in 1828, at 1,850,000 dollars. The markets of Cincinnati are abundantly supplied with various kinds of provisions, at a low price.

Chillicothe is on the west bank of the Scioto, forty-five miles, in a direct line, from its mouth. It has many valuable mills and manufactories, and is the second town in the state. Columbus, the seat of government, is regularly laid out on a pleasant rising ground on the east bank of the Scioto, just below the confluence of Whetstone, forty-five miles north of Chillicothe. Marietta, the oldest town in the state, is on the Ohio, at the mouth of the Muskingum. Its situation is unfortunate, parts of the town being liable to an annual inundation, an inconvenience

which has much retarded its growth. Zanesville is on the Muskingum, sixty miles north of Marietta. Steubenville is on the Ohio, near the Pennsylvania boundary. Athens is on the Hockhocking, about fifty miles east of Chillicothe. Cleveland is on Lake Erie, at the mouth of the Cayahogo.

INDIANA

Is bounded by the Lake and territory of Michigan on the north; by Ohio on the east; by Kentucky, from which it is separated by the River Ohio, on the south; and by Illinois on the west. It extends from latitude $37^{\circ} 48'$ to $41^{\circ} 36'$; and longitude $41^{\circ} 42'$ to $87^{\circ} 49'$. Indiana is in length 264 miles; in mean width 124; and its area is 34,000 square miles.

There are no mountains in Indiana; the country, however, is more hilly than the state of Illinois, particularly towards the Ohio. A range of hills called the Knobs, extends from the falls of the Ohio to the Wabash, in a southwest direction, in many places producing a broken and uneven surface. North of these hills lie the flat woods, seventy miles wide. Bordering on all the principal streams, except the Ohio, there are stripes of bottom and prairie land, both together from three to six miles in width. Between the Wabash and Lake Michigan the country is mostly champaign, abounding alternately with woodlands, prairies, lakes, and swamps. A range of hills runs parallel with the Ohio, from the mouth of the great Miami to Blue River, alternately approaching to within a few rods of the river, and receding to the distance of two miles. Immediately below Blue River the hills disappear, and there is presented to the view an immense tract of level land, covered with a heavy growth of timber. North of the Wabash, between Tippecanoe and Ouatanan, the banks of the streams are high, abrupt, and broken, and the land, except the prairies, is well timbered. Between the Plein and Theakiki the country is flat, wet, and swampy, and interspersed with prairies of an inferior quality. The sources of rivers are generally in swamps or lakes, and the country around them is low, and too wet for cultivation. The soil of the prairies is often as deep and fertile as the best bottoms. Those bordering on the Wabash are particularly rich. Wells have been dug in them, where the vegetable soil was twenty-two feet deep, under which was a stratum of fine white sand. The ordinary depth is from two to five feet.

The climate is generally healthy and pleasant, resembling that of Ohio. The Wabash is frozen over in the winter, so that it may be safely crossed

on the ice. More than half the land in this state remains in the possession of the Indians. Its principal productions are wheat, Indian corn, rye, oats, barley, buckwheat, potatoes, pulse, beef, pork, butter, whiskey, and peach brandy. Not far from Big Blue River there is a large cave, the entrance of which is on the side of a hill, about 400 feet high. Here are found great quantities of sulphate of magnesia, or Epsom salt, of nitre, &c. The earth most strongly impregnated yields twenty or twenty-five pounds of salt to a bushel.

When Indiana was admitted into the union, in 1816, congress granted one section, or one thirty-sixth part of each township, for the support of schools. One entire township, or 23,040 acres, said to be worth, on an average, ten dollars an acre, was also given for the support of a college. The college is situated at Vincennes, and a large brick building is already erected for its use. The constitution of In-

diana contains the following important provision respecting general education: "It shall be the duty of the general assembly, as soon as circumstances will permit, to provide by law for a general system of education, ascending in a regular gradation from township schools to a state university, wherein tuition shall be gratis, and equally open to all." The cause of popular education has not, however, as yet, received that attention which this provision of the constitution would seem to warrant, or which its importance demands; it is, nevertheless, advancing, and excites increased interest. Several respectable public and private seminaries are supported in different parts of the state.

The Baptists in this state have 11 associations, 181 churches, 127 ministers, and 6,513 communicants; the Methodists, 34 preachers, and 13,794 members; the Presbyterians, about 50 churches, and 20 ministers.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population.	County Towns.	Distance.	
			Ind.*	W.†
Allen, N. E.	1,000	Fort Wayne	141	561
Bartholomew, M.	5,480	Columbus	41	598
Boon, S. W. M.	622	Thorntown	62	620
Carroll	1,614	Delphi	88	661
Cass	1,154	Logansport	113	642
Clark, S.	10,719	Charlestown	105	583
Clay, W.	1,616	Bowling-Green	69	641
Clinton	1,423	Frankfort		
Crawford, S.	3,184	Fredonia	122	632
Daviess, S. W. M.	4,512	Washington	106	673
Dearborn, S. E.	14,573	Lawrenceburgh	98	523
Decatur, S. E. M.	5,854	Greensburg	55	559
Delaware, E. M.	2,372	Muncytown	59	546
Dubois, S. W. M.	1,774	Portersville	124	662
Elkhart	935	Pulaski		
Fayette, E. M.	9,112	Connersville	68	527
Floyd, S. E.	6,363	New Albany	121	594
Fountain, W.	7,644	Covington	81	654
Franklin, S. E.	10,199	Brookville	70	524
Gibson, S. W.	5,417	Princetown	141	702
Greene, S. W. N.	4,253	Bloomfield	76	648
Hamilton, M.	1,750	Noblesville	22	580
Hancock, M.	1,569	Greenfield	21	552
Harrison, S. E.	10,288	Corydon	124	614
Hendricks, M.	3,967	Danville	20	593
Henry, E. M.	6,498	New Castle	49	536
Jackson, S. M.	4,894	Brownstown	69	603
Jefferson, S. E.	11,465	Madison	85	576
Jennings, S. E. M.	3,950	Vernon	64	565
Johnson, M.	4,139	Franklin	20	593
Knox, W.	6,557	Vincennes	126	693
Lawrence, S. M.	9,237	Bedford	73	633
Madison, M.	2,442	Andersontown	41	561
Marion, M.	7,181	INDIANAPOLIS		573
Martin, S. M.	2,010	Mount Pleasant	121	659
Monroe, S. M.	6,578	Bloomington	51	627
Montgomery, W. M.	7,386	Crawfordsville	44	617
Morgan, M.	5,579	Martinsville	30	603
Orange, S. M.	7,909	Paoli	94	636
Owen, W. M.	4,060	Spencer	52	624
Parke, W.	7,534	Rockville	68	640
Perry, S.	3,378	Rome	143	655
Pike, S. W.	2,464	Petersburgh	119	681

* From Indianapolis.

† From Washington.

Counties.	Population.	County Towns.	Distance.	
			Ind.*	W.†
Posey, s. w.	6,883	Mount Vernon	187	748
Putnam, w. m.	8,195	Green Castle	42	614
Randolph, e.	3,912	Winchester	97	523
Ripley, s. e. m.	3,957	Versailles	79	551
Rush, e. m.	9,918	Rushville	40	553
St. Joseph, n.	287	Tarecoopy		
Scott, s. e.	3,097	New Lexington	89	594
Shelby, m.	6,294	Shelbyville	30	575
Spencer, s.	3,187	Rockport	167	692
Sullivan, w.	4,696	Merom	115	688
Switzerland, s.	7,111	Vevay	105	556
Tippecanoe, n. w. m.	7,167	Lafayette	70	643
Union, e.	7,957	Liberty	77	650
Vanderburgh, s. w.	2,610	Evansville	170	728
Vermillion, w.	5,706	Newport	86	658
Vigo, w.	5,737	Terre Haute	83	655
Wabash, n. w. m.		Elk Heart Plain	196	616
Warren, w.	2,854	Williamsport		
Warrick, s. w.	2,937	Boonville	187	712
Washington, s. m.	13,072	Salem	91	613
Wayne, e.	18,587	Centreville	63	510
Total	341,582			

POPULATION AT DIFFERENT PERIODS.

Population.		Increase.		Slaves.
In 1800,	5,641	From 1800 to 1810,	18,879	133
1810,	24,520	1810	1820,	237
1820,	147,178	1820	1830,	190
1830,	341,583	1830	1840,	0

Indiana was admitted into the union in 1816, and contained, in 1815, by enumeration, 68,780 inhabitants. This state has had a rapid increase of inhabitants; yet the greater part of the land within its limits still belongs to the United States. It contains no large towns.

Vincennes, the largest town in the state, is on the east bank of the Wabash, sixty-five miles from its junction with the Ohio in a direct line, but nearly 120 by the course of the river. It was settled about a century ago by the French from Lower Canada, many of whom intermarried with the Indians, and gradually approximated to the savage state; but within a few years American emigrants have flocked thither, and the society is rapidly improving. Corydon, in Harrison county, on Indian Creek, and about twenty-five miles west of Louisville, was, until lately, the seat of government. This settlement commenced in 1809, and is rapidly increasing. Vevay, in Switzerland county, is pleasantly situated on the second bank of the Ohio, twenty-five feet above high-water mark. The inhabitants are emigrants from the Pays de Vaud, in Switzerland. In 1814, the site of the town was a forest, but it is now a flourishing settlement. The country in the rear is broken and fertile; and, half a mile below the village are the Swiss vineyards, where the culture of the vine has been successfully introduced. Brookville, pleasantly

situated in the forks of Whitewater River, is a flourishing town, and will probably be the centre of trade for an extensive and fertile portion of the state. Jeffersonville, on the Ohio, a little above the falls, and nearly opposite Louisville, promises to become a place of considerable business. Princeton, Harmony, Evansville, Troy, Terre Haute, Madison, Lawrenceburgh, and Fort Wayne, are all thriving settlements. The seat of government has been lately fixed at Indianapolis, near the centre of the state.

ILLINOIS.

THIS state has the Trans-Michigan territory for its northern boundary; Lake Michigan, Indiana, and Kentucky on the southeast; and the Mississippi on the west and southwest. Length from the junction of the Mississippi and Ohio, north latitude 37°, to the northern boundary of the state, north latitude 42° 30', 382 miles; mean breadth, 154 miles; area, 58,900 square miles, equal to 35,696,000 statute acres.

Illinois is, after Virginia, Georgia, and Missouri, the largest in point of extent, and in general fertility the first state of the union. Extending over a zone of 5½° of latitude, it embraces the greatest extent north and south; Georgia and New York only embracing each 4°. Illinois is, comparatively speaking, a very gently inclined plane. It is a country of so very

* From Indianapolis.

† From Washington.

little difference of level, that it may be doubted whether the general level varies 600 feet. The surface of it is singular, and very picturesque. It is nearly all prairie, with a few groves of timber widely separated from each other, and deeply indented with ravines, whose sides slope off into low round hills, as if an exact plain had been divided into an infinite number of globular eminences. With all its uniformity of surface, the climate at the extremes differs very materially.

Illinois, in regard to soil, resembles Ohio and Indiana, but with less of flat and irreciamable land than either, and more generally of rich plain than both the latter taken together. The surface is rolling on the south and west, and level on the north and east. The staple productions of Illinois are Indian corn, wheat, potatoes, beef, pork, horses, tobacco, and lead. The castor bean is raised, and oil is manufactured from it, but not in large quantities. Good cotton is produced for home consumption, and is manufactured extensively in the families of the farmers, into coarse fabrics, for domestic uses. Hemp, flax, and silk-worms, succeed well. Apples, peaches, pears, plums, cherries, grapes, gooseberries, and currants, arrive at great perfection. The wild fruits are grapes, plums, cherries, gooseberries, mulberries, crab-apples, persimmons, blackberries, raspberries, and strawberries. In the timbered parts of the country the trees exhibit a luxuriant growth, and are often seen of an enormous size.

The whole of this country abounds in coal. Salt is manufactured extensively in the neighbourhood of Shawneetown, in Gallatin county; salt springs have been discovered in other places, but salt has not yet been manufactured from them. Sulphur springs, chalybeate springs, and very strong impregnations of pure sulphate of magnesia, abound in different parts. In the southern part of the state a number of sections of land have been reserved on account of the silver ore which they are supposed to contain.

The lead mines in the vicinity of Galena, are very extensive and valuable. The mineral has been found in every portion of a tract of more than fifty miles in extent in every direction, and is supposed to occupy a territory of more than twice that size. The ore lies in beds, or horizontal strata, varying in thickness from one inch to several feet. It yields seventy-five per cent. of pure lead.

A canal has been projected, though not yet commenced, to unite Lake Michigan with the river Illinois, and the general government has made a donation of land in aid of the design. The length will be about seventy miles; and the cost is estimated at 800,000 dollars. Labourers are now employed in the construction of that part of the national road which extends from the town of Vandalia to the eastern boundary of Indiana, near Terre Haute. The length of this part is ninety miles, and the road is so straight that its length is not so much as a mile greater than the distance by a right line between the two extreme points.

Land to the amount of 998,374 acres has been given for the support of schools; but no system of general education has yet been organized. The following particulars are extracted from an "Appeal in behalf of the Illinois College." "It appears that in the fifty-one counties, containing a population of 157,575 souls, there are 550 common schools, and fifty-one Sunday schools. From the new census it appears that the number of children in the state is 47,895; an examination shows that the whole number of children in the schools, at one season or other, is 12,290. Large numbers of the men and women throughout the state, and a great proportion of the children, are wholly unable to read."

The Baptists in this state have 6 associations, 80 churches, 69 ministers, and 2,432 communicants; the Methodists, 45 preachers and 8,859 members; the Presbyterians, 24 churches, 13 ministers, and 492 communicants.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population.	County Towns.	Distance.	
			V.*	W.†
Adams, w.	2,186	Quincy	193	974
Alexander, s.	1,390	America	181	850
Bond, w. m.	3,124	Greenville	20	801
Calhoun, w.	1,090	Gilead	126	907
Clark, E.	3,940	Clark, C. H.	86	696
Clay, E. M.	755	Maysville	46	740
Clinton, s. m.	2,330	Carlyle	30	802
Crawford, E.	3,113	Palestine	118	718
Edgar, s.	4,071	Paris	106	675
Edwards, E.	1,649	Albion	92	733
Fayette, M.	2,704	VANDALIA		781
Franklin, s.	4,081	Frankfort	102	808

* From Vandalia.

† From Washington.

Counties.	Population.	County Towns.	Distance.	
			V.*	W.†
Fulton, N. M. }	2,156	Fulton, C. H.	133	854
Henry, N.		Middletown		
Knox, N. M. }		Knox, C. H.	188	877
Gallatin, S. E.	7,407	Equality	137	773
Green, W.	7,664	Carrollton	106	867
Hamilton, S. E.	2,620	M ^l Leanborough	93	773
Hancock, W.	484	Venus	133	914
Jackson, S. W.	1,827	Brownsville	127	833
Jefferson, S. M.	2,555	Mount Vernon	65	801
Jo-Daviess, N. W.	2,111	Galena	326	990
Johnson, S.	1,596	Vienna	167	817
Lawrence, E.	3,661	Lawrenceville	84	702
Macapuin, M.	1,989	Carlinville	95	861
M ^l Lean		Bloomington		
Macon, W. M.	1,122	Decatur	70	771
Madison, W.	6,229	Edwardsville	55	830
Marion, S. M.	2,021	Salem	26	777
Mercer, N. W.	26			
Monroe, W.	2,119	Waterloo	99	890
Montgomery, M.	2,950	Hillsborough	28	809
Morgan, W. M.	12,709	Jacksonville	115	837
Macdonough, W. M. }	2,050	Macomb		
Schuyler, W. M. }		Rushville	172	894
Peoria, N. M. }		Peoria	43	807
Putnam, N.	1,309	Hennepin		
Perry, S. M.	1,215	Pinckneyville	129	842
Pike, W.	2,393	Atlas	148	929
Pope, S. E.	3,323	Golconda	160	791
Randolph, S. W.	4,436	Kaskaskia	95	867
St. Clair, W.	7,092	Belleville	71	843
Sangamon, M.	12,960	Springfield	79	801
Shelby, M.	2,973	Shelbyville	40	741
Tazewell, M.	4,716	Mackinaw	149	790
Union, S. W.	3,239	Jonesborough	154	830
Vermillion, E.	5,836	Danville	150	683
Wabash, E.	2,709	Mount Carmel	109	716
Warren, N. W.	307	Warren		
Washington, S. M.	1,674	Nashville		
Wayne, S. E. M.	2,562	Fairfield	69	756
White, S. E.	6,091	Carmi	94	748
Total	157,575, of whom 746 are slaves.			

POPULATION AT DIFFERENT PERIODS.

Population.	Increase.	Slaves.
1810, 12,232		168
1820, 55,211	From 1810 to 1820, 42,929	917
1830, 157,575	1820 1830, 102,364	746

Illinois was admitted into the union in 1818, and contained that year, by enumeration, 35,220 inhabitants.

Kaskaskia, lately the seat of government, is on the right bank of the Kaskaskia river, eleven miles from its mouth. It contains a land office, a printing office, and about 160 houses, scattered over an extensive plain. The town was settled upwards of 100 years ago by emigrants from Lower Canada, and about one half of the inhabitants are French. The surrounding country is under good cultivation. Cahokia is a French settlement, on the Mississippi, fifty-two miles north-north-west of Kaskaskia, and five miles below St. Louis. Shawneetown is on the north bank of the Ohio, twelve miles below the mouth of the Wabash, and twelve miles east of the salt

works belonging to the state on Saline creek. The inhabitants are supported principally by the profits of the salt trade. Edwardsville is a flourishing town on Cahokia river, twenty-two miles northeast of St. Louis. Vandalia, fifty miles northeast of Edwardsville, is now the seat of government.

MISSOURI.

This was the last state admitted into the union. It is bounded on the west and north by the unappropriated territory of the United States; on the east by the Mississippi, which divides it from Illinois and Tennessee; and on the south by the Arkansas territory. It extends from longitude 89° to 94° 10', and from latitude 36° to 40° 36'. Mean length from north to south 280 miles; area rather exceeding 63,000

* From Vandalia.

† From Washington.

square miles, or 40,320,000 acres; the mean width is 225 miles.

Though, with the exception of the alluvial bottoms, Missouri is rolling or hilly, yet no part rises to an elevation deserving the name of a mountain. A chain of hills commences southeast from the mouth of Osage river, and stretching southwest, is the beginning of the Ozark or Maserne chain; but it remains humble until far within Arkansas. No other state of the union, however, is so greatly diversified in respect to soil and external features. The prairie region, commencing in Ohio and Indiana, spreading into immense plains in Illinois, expands still more in western Missouri. To a civilized and commercial people, rivers are of primary importance. The far greater part of fertile and easily cultivated soil is on the banks of rivers; where also rise the most extensive and wealthy cities. In this respect there is perhaps no equal section of the earth to compare with Missouri. The Mississippi sweeps along its eastern border 550 miles, receiving in its course the still mightier Missouri. The latter entering the western boundary traverses the state, receiving from each side tributaries which, if not contrasted with the stream into which they are poured, would deserve the title of fine rivers. The Osage, rising in the angle between Arkansas and Kansas rivers, on the vast plains west from the state of Missouri, carries its very serpentine but navigable volume into Missouri river near the centre of the state. The Illinois and Ohio, though not within the state, are in a commercial point of view rivers of Missouri. The White river and the St. Francis rise in this state, and flowing southward, connect it with the Arkansas.

The soil is as varied as is the surface; every quality is found, from the most productive and exhaustless alluvion, to sterile clay or silicious sand. On the eastern border, and near the streams generally, a dense forest covered Missouri although in some places naked prairie encroaches upon the streams. In general terms the southeast section is alluvial, and liable to a partial annual inundation; the southwestern is mixed prairie and "Flint Hill" land. The northern section, west from the Mississippi, and north from the Missouri, says Mr. Flint, "is no where mountainous. It contains great tracts of alluvial and hilly prairies. It is for the most part a surface delightfully rolling and variegated. There is no part of the globe where greater extents of country can be traversed more easily, and in any direction, by carriages of any description, where

there are no roads, and that is yet in a state of nature." These three portions have each their appropriate features, but are interspersed with minor tracts partaking of the general character of the others. According to Mr. Flint there is a specific difference between the alluvium of the two rivers Mississippi and Missouri; the bottoms of the Missouri being more loamy and sandy, and those of its rival more clayey, and yet more substantial. The whole state will, with no very great exceptions, support a dense population. Its geographical extent, and its very great diversity of soil, will admit a correspondent variety of vegetable production. Wheat and Indian corn have been from the first the staples, though in the southeast section cotton is produced. Agriculture in all its forms, either as an art or a science, is in its infancy in Missouri, as it may be considered to be in any newly settled country where nature has done too much.—Three winters in five the Mississippi becomes passable on the ice at St. Louis. In 1818, it was so for upwards of two months. Receding from the Atlantic, it is in this state that the frigid winds of the northwest are first experienced, in all their force. The climate is, in brief, cold and windy, as well as dry and bracing. The successive years also vary exceedingly; and uncertain as are the revolutions in meteorology elsewhere, they are proverbially variable in the state of Missouri and the adjacent regions.

This state has become celebrated for immense deposits of lead ore, chiefly of galena. The principal lead region is in Washington county and the parts adjacent, extending about 30 by 15 miles. The centre of the district is about 70 miles southwest from St. Louis. The ore is found in imbedded masses, and evidently a deposit. None has yet been found *in situ*, though some of the diggings have reached to 80 feet. Coal in immense strata also exists in Missouri, and at some future period must greatly exceed in value the lead mines; as in a country of intense winter and scarcity of wood, coal mines must be a resource of primary importance. Iron ore forms no inconsiderable part of many of the hills of Missouri; but as this invaluable mineral is found almost every where, its existence here, though highly advantageous, gives but little local preference.

The principal exports are lead and furs. A large capital is employed in the fur-trade with the Indians up the Missouri and Mississippi. St. Louis is the centre of this commerce. Boats are continually passing between St. Louis and New Orleans. Since the independence of Mexico, a considerable trade has been carried on with the interior provinces of that repub-

lic. In 1825, commissioners of the United States laid out a road through the wilderness, from Missouri to Mexico; and the Osages by treaty, in consideration of 800 dollars, granted the right of making and using the road through their lands.

St. Louis College, and another seminary, at a place called Bois Brule Bottom, in the southern part of the state, both Catholic institutions, are the most considerable literary seminaries in Missouri. St. Louis College, pleasantly situated on the outside of the city of St. Louis, was founded in 1829. The building is of brick, fifty feet by forty, four stories high, including the basement; and the library contains

about 1,200 volumes. There are five professors, and 125 pupils, partly from Catholic and partly from Protestant families, attending to different branches of English education, and the elementary parts of classical learning. There are several convents in the state, to which young females are sent for education.

The Baptists in this state have nine associations, 111 churches, 67 ministers, and 3,955 communicants; the Methodists, 23 preachers, and 3,403 members; the Presbyterians, 17 churches, 10 ministers, and 605 communicants; the Roman Catholics, a considerable number of churches and priests; the Episcopalians, 3 ministers.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population.	County Towns.	Distance.	
			J.*	W.†
Boone, M.	8,889	Columbia	56	891
Callaway, M.	6,102	Fulton	32	967
Cape Girardeau, S. E.	7,430	Jackson	208	856
Chariton, N. M.	1,776	Chariton	79	1031
Clay, N. W.	5,342	Liberty	190	1142
Cole, M.	3,006	JEFFERSON CITY		980
Cooper, M.	6,019	Booneville	51	1023
Crawford	1,709	Little Piney	98	989
Franklin, E. M.	3,484	Union	79	901
Gasconade, M.	1,548	Gasconade	47	939
Howard, M.	10,844	Fayette	65	1017
Jackson, W.	2,822	Independence	177	1129
Jefferson, E.	2,586	Herculaneum	164	886
Lafayette, W.	2,921	Lexington	138	1090
Lincoln, E.	4,060	Troy	97	913
Madison	2,371	Fredericktown	170	894
Marion, N. E.	4,839	Palmyra	190	984
Monroe		Monroe, C. H.	129	998
Montgomery, E. M.	3,900	Lewistown	67	932
New Madrid, S. E.	2,351	New Madrid	278	892
Perry, E.	3,377	Perryville	187	882
Pike, N. E.	6,122	Bowling-Green	132	948
Ralls, N. E.	4,346	New London	167	961
Randolph, N. M.	2,962	Randolph	96	1042
Ray, N.	2,657	Richmond	149	1101
St. Charles, E.	4,322	St. Charles	123	876
St. Francois, S. E. M.	2,386	Farmington	152	912
St. Genevieve, E.	2,182	St. Genevieve	168	874
St. Louis,† E.	14,907	St. Louis	134	856
Saline, N. M.	2,893	Walnut Farm	85	1038
Scott, S. E.	2,136	Benton	236	861
Washington, E. M.	6,797	Potosi	127	915
Wayne	3,254	Greenville	200	908
Total	140,074, of whom 24,990 are slaves.			

POPULATION AT DIFFERENT PERIODS.

Population.		Increase.		Slaves,
1810,	19,833			3,011
1820,	66,586			
1824,	80,677	From 1800 to 1820,	46,753	10,222
1830,	140,074	1820 1830,	73,488	24,990

w

The situation of St. Louis is elevated, pleasant, and healthy. The ground on which it stands rises gradually from the first to the second bank of the Mississippi. Three streets run parallel with the river, and are intersected by others at right angles. The

town extends along the river about two miles. The second bank of the river is about forty feet higher than the spot on which the town is chiefly built, and affords a fine view of the town and river. On this bank stand the fortifications, erected in early times

* From Jefferson City.

† From Washington.

† Population of St. Louis, the largest town, in 1820 4,598; and in 1830, 5,852.

for the defence of the place. They consist of several circular towers, twenty feet in diameter and fifteen in height, a small stockaded fort, and a stone breast-work. The courts are held in one of the buildings of the fort, and another is used for a prison. The town contains three houses of public worship, a land office, a brewery, two water-mills, one steam-mill, a museum, two banks, a theatre, and two printing-offices, from each of which is issued a weekly newspaper. The houses are mostly of wood, but many are built of stone and are white-washed; very few of them are handsome. Most of the houses are furnished with a large garden. St. Louis was settled in 1764. It is at present in a state of rapid improvement, fast increasing in population and trade. Its situation is advantageous and interesting, being more central with regard to the whole territory belonging to the United States, than any other considerable town. Uniting the advantages of the three great rivers, Mississippi, Missouri, and Illinois, with their numerous branches, and possessing unrivalled facilities for an extensive trade, it will probably become a large city, and be the centre of an extensive commerce. The country around and west of St. Louis, for the distance of fifteen miles, is an extended prairie of very luxuriant soil.*

The other chief towns in Missouri are, Herculaneum, on the Mississippi, thirty miles below St. Louis; St. Genevieve, on the same river, sixty-four miles below St. Louis; St. Charles, on the Missouri, twenty-five miles north of St. Louis; Cape Girardeau, on the Mississippi, sixty miles above the mouth of the Ohio; and New Madrid, on the Mississippi, sixty-five miles below the mouth of the Ohio. Jefferson, on the south side of the Missouri, near the mouth of Osage River, has recently been laid out as the seat of government. Franklin, in Boone's Lick settlement, about seventy-five miles above Jefferson, is a thriving town.

CHAPTER IV.

DELAWARE—MARYLAND—DISTRICT OF COLUMBIA
—VIRGINIA—KENTUCKY—NORTH CAROLINA—
TENNESSEE.

DELAWARE.

WITH the exception of Rhode Island, this is the smallest state in the union. It is bounded on the

* *Steam-boat Navigation from St. Louis.*—St. Louis is 1,200 miles, by the course of the river, above New Orleans. In the summer of 1831, there were six steam-boats regularly employed between St. Louis and New Orleans. A trip from one place to the other and back again usually occupies twenty-four days; the shortest time

north by Pennsylvania; on the east by Delaware Bay and the Atlantic; and on the south and west by Maryland. Longitude, 74° 56' to 75° 40'; latitude, 38° 29' to 39° 47'. Length 100 miles; mean width, twenty-one miles; and area 2,100 square miles.

Delaware is the least diversified in surface of any of the states. The more northern part is hilly and waving, but it becomes monotonous towards the Atlantic Ocean. The actual dividing line between the waters of the Delaware and the Chesapeake Bay is in Delaware: but so far from being a ridge, it is mostly an extended flat, from which the Pocomoke, Nanticoke, Choptank, Chester, and Sassafras Rivers, ooze, rather than flow, into Chesapeake Bay, and a number of unimportant creeks flow into the Delaware. The soil, in some places excellent, is generally thin, and in many places marshy. The climate is more distinctly different, at the extremes, than could be expected from a difference of latitude of only 1° 23' and no considerable difference of level. Fruits are abundant, and grain and meadow-grass are the general objects of agricultural pursuit. Wheat is the staple commodity, and Delaware is noted for its excellent flour. From the mean annual temperature of Baltimore, it is evident that cotton might be made a staple crop in Delaware, and on the eastern shore of Maryland. Little metallic wealth can be expected in a region so approaching to recent alluvium as Delaware.

The Delaware and Chesapeake Canal, which completes a water communication by sloops and steam-boats between Philadelphia and Baltimore, commences on the Delaware, about forty miles below Philadelphia, crosses the peninsula in a direction nearly west, and enters the tide waters of the Elk River, a tributary of the Chesapeake. It is about fourteen miles in length, sixty feet broad, and ten feet deep, with a rise of eight feet only above the tide to its summit level. The ample dimensions adapt it to the passage of the largest schooners of the Chesapeake and Delaware Bays, and the work is worthy of Philadelphia, in which the design was conceived and matured. It presents the greatest excavation ever attempted in any country; and the drains constructed for the passage of the waste water are nearly equal in magnitude to the largest canal of New York. At its entrance into the Delaware has been constructed a spacious harbour, twenty feet deep at low water, capable of containing 200 vessels of a large class, and affording

in which one was ever made was eighteen days. The usual fare for cabin passengers, descending, 20 dollars; ascending, 25 dollars; for deck passengers, 5 dollars either way. Freight per 100 lbs., descending, 37 1-2 cents; ascending, 62 1-2 cents. From St. Louis to Louisville, 630 miles: six boats regularly running, in



Copyright 1877 by J. B. Lippincott & Co.

Printed by J. B. Lippincott & Co.

WASHINGTON MONUMENT, BALTIMORE, M.D.

shelter against the dangers of the bay at every season of the year. The cost of the work is estimated at about 1,200,000 dollars. In its session of 1824-5, congress made a liberal subscription of 300,000 dollars to this truly national undertaking.

The Methodists in this state have 15 preachers and 12,304 members; the Presbyterians, 8 churches 9 ministers, 1 licentiate, and 1,300 communicants; the Baptists, 9 churches, 9 ministers, and 520 communicants; the Episcopalians, 6 ministers.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Distance.	
				D.*	W.†
Kent, M.	20,793	19,911	DOVER		114
New Castle, N.	27,899	29,710	{ Newcastle	42	103
Sussex, S.	24,057	27,118	{ Wilmington	47	108
			Georgetown	40	122
Total	72,749	76,739, of whom 3,305 are slaves.			

Dover, a small town near the centre of the state, is the seat of government. Wilmington, the largest town, is situated between the Brandywine and Christiana creeks, two miles from the Delaware, and is celebrated for the number and importance of the manufactories in its vicinity, particularly the flour mills, which are the finest in the United States. Newcastle and Smyrna have some trade; and Lewistown is noted for salt works.

MARYLAND.

The ground plan (if we may be permitted the expression) of this state presents a very singular appearance, being completely, though irregularly, divided in its whole length by perhaps the most noble estuary in the world, Chesapeake Bay. The state is bounded on the north by Pennsylvania; on the east by Delaware and a portion of Virginia; on the south by the confluence of Chesapeake Bay with the Atlantic; and on the west by the Potomac, which separates it from Virginia. It extends from longitude 75° 10' to 79° 20'; latitude 38° 03', and 39° 42'. "The area of Maryland," says Mr. Darby, "is generally and greatly overrated. This exaggeration has arisen from its very irregular form, and from including the surface of Chesapeake Bay. I have taken some extra trouble to obtain the true area, and find that the land superficies is within an inconsiderable fraction of 10,000 square miles."

All those parts of Maryland east from Chesapeake, and west from that bay to the head of tides, may be

considered as recent alluvium. Above tide water, the surface rises, though not very rapidly, into hills, which reach the foot of the mountains. The third or mountainous section constitutes the western part of the state. Much highly productive soil exists in each zone, but in general the intermediate valleys of the mountainous part contain the most fertile. The limestone tracts of Frederick and Washington exhibit a fertility not surpassed in the United States. The hilly or middle zone is very variable; and in a very limited extent are frequently found the extremes of sterility and fertility. The marine and river alluvial section though not, affording any surface equally productive with the calcareous parts of the western, is more uniform than the middle zone. The surface of the alluvial region, though not rising into hills of any considerable elevation, is far from being a dead plain. In a state of nature, Maryland was, with little exception, covered with a dense forest. The diversity of soil and elevation induces in Maryland an extended facility of vegetable production, by which the staples have been greatly multiplied. The whole arable surface of Frederick, Washington, and Allegany counties, may be regarded as lying more than 500 feet above the ocean. The Apalachian system of mountains forms the western part of Maryland, and gives origin to its most considerable river, the Potomac. The ridges rise into a barrier in no place less than 2,486 feet in height, and in many places exceeding 3,000 feet. This mountain chain raises a very formidable impediment to canal construction. An elevation of 2,486 feet in winter gives to the mountain ridges

1831: usual time of a trip, eleven days; the passage one way being somewhat more than three days. Fare of cabin passengers, about ten or fifteen dollars either way; deck passengers, four dollars; freight, about 25 cents per 100lbs. One boat, also, ran regularly to Cincinnati, 150 miles above Louisville. From St. Louis to Fever River, about 480 miles: three steam-boats regularly employed in 1831: time occupied by a trip, about ten days. Fare for passengers, ascending, 15 dollars; descending, 9 dollars. The route of one of the boats occasionally extended to St. Peter's

River, 400 miles further up. In 1831, two boats were employed in running from St. Louis up the Missouri to Franklin, 200 miles, and to Fort Leavenworth, 200 miles further. Freight to Franklin, 75 cents per 100 lbs, and to Fort Leavenworth, from 1 dollar 25 cents, to 1 dollar 50 cents; from Franklin, down, 25 cents per 100 lbs. From St. Louis to Pekin, on Illinois River, 180 miles: two or three boats regularly employed in 1831. Steam-boats come occasionally to St. Louis from Pittsburgh and other places.

* From Dover.

† From Washington.

of Maryland a temperature similar to that on the Atlantic Ocean in latitude 45°.

The soil is generally a red clay or loam, and much of it is excellent, producing good crops of wheat, Indian corn, hemp, and flax. Here are also fine orchards, and apples, pears, peaches, plums, and cherries, are abundant. Of peaches, the inhabitants make large quantities of peach brandy; and of apples, apple brandy and cider. The forests abound in nut-bearing trees, which feed great numbers of swine. These run wild, and, when fattened, are killed, barrelled, and exported in great quantities. Beef and mutton are also plentiful. Some cotton for domestic use is raised in this state, but it is of inferior quality.

The most considerable export from this state is that of flour; and next to this is tobacco. The other exports are iron, lumber, Indian corn, pork, flaxseed, beans, &c. Its trade is principally carried on from Baltimore. This state abounds with mines of excellent iron ore, and has also some coal. Furnaces have been erected in various parts for the manufacture of pig and bar iron, hollow ware, cannon, stoves, &c. There are a number of glass works, paper mills, &c. Large quantities of rye are distilled into whiskey; but the most considerable manufacture is that of flour.

A turnpike has been completed from Baltimore to Cumberland, on the Potomac, a distance of 135 miles. From Cumberland to Brownsville on the Monongahela, in Pennsylvania, there is now completed by the United States a free road of a most excellent construction. The distance is seventy-two miles, making the whole distance from Baltimore to Brownsville 207 miles. A turnpike extends from Baltimore in a north west direction sixteen miles, to Reister town, and there divides; one branch turning more to the north, meets the Pennsylvania line in nineteen miles; the other in a west-northwest direction runs twenty nine miles in Maryland. A turnpike road has been made from Baltimore by York and Pennsylvania, to the Susquehanna, by which large quantities of the produce of Pennsylvania are brought to that city. The Havre de Grace turnpike, leading to Philadelphia, and the Belle Air turnpike, have both been commenced, and are advancing to their completion.

Port Deposit Canal is a public work of Maryland, of ten miles in length, from Port Deposit, on the east bank of the Susquehanna, along a line of rapids northward to the boundary line of Maryland and Pennsylvania. At Little or Lower Falls, on the Potomac, three miles above Washington, is a canal two miles and a half long; difference of level thirty-seven feet one inch, overcome by four sets of locks of solid

masonry, eighty feet long and twelve wide. At Great Falls, nine miles above, is a canal 1,200 yards long, lined with walls of stone; difference of level seventy-six feet nine inches, surmounted by five sets of locks of solid masonry, 100 feet long, and from ten to fourteen wide; lifts from ten to eighteen feet. Both here and at Little Falls, the canal dimensions are twenty-five feet wide at surface, twenty at bottom, four feet deep. Canals on a smaller scale are constructed at Seneca Falls, Shenandoah Falls, and House's Falls. These works were executed by the Potomac company, incorporated in 1784 by Maryland and Virginia; but they are to be surrendered to the Chesapeake and Ohio canal company. The most important undertaking, however, is the Baltimore and Ohio Rail-road, which is to extend from the city of Baltimore to the river Ohio, about 350 miles; it is now in progress, and is the greatest enterprise of the kind in America.

In 1696 funds were appropriated by the province for the support of a college and free schools, the former of which had made considerable progress before 1776. Washington College, at Chestertown, was established in 1782. St. John's College was established in 1784, at Annapolis, and these two were united into a university. After the peace of 1783, a fund was again appropriated for the college. This was withdrawn in 1804; but the state appropriated 12,000 dollars per annum, and in 1813 laid a tax upon bank stock, which yields about 10,000 dollars, the whole of which is appropriated to the support of free and charity schools. In addition to this, the personal estate of any person who dies intestate, and leaves no relations within the fifth degree, is appropriated to this object, with the exception of the property of seamen who die in the port of Baltimore, which devolves to the Charitable Marine Society. The money received from the tax on bank stock is equally divided among all the counties in the state, although the population of some is much greater than that of others. Sunday schools are very numerous. —In 1807 the legislature founded, in the city of Baltimore, a college for the instruction of students in the different branches of medical knowledge, and, in 1812, the faculty of medicine was authorized to annex the faculties of divinity, law, and arts and sciences, the whole of which were incorporated under the name of the University of Maryland. The institution is governed by twenty-eight regents and a provost. The professor of theology and six ordained ministers constitute the faculty of divinity; the professor of law and six qualified members of the bar, that of law; that of medicine is composed of the professors of sur-

gery, anatomy, the theory and practice of physic, chemistry and mineralogy, institutes of medicine, obstetrics, and materia medica; that of arts and sciences is constituted of four professors and the principals of any three academies or colleges in the state. Each faculty organizes itself, chooses its own dean, fills its own vacancies, and makes such rules for its government as are not inconsistent with those enacted by the regents. The medical school offers great facilities for the acquisition of information in that department of science, as much pains has been bestowed in rendering it complete. The philosophical and chemical apparatus is extensive, and the museum contains a very valuable collection of anatomical preparations. The mineralogical collection is also very respectable. The state has recently granted 30,000 dollars to this rapidly growing institution.

Baltimore College, a chartered and respectable seminary, is in a very flourishing state. St. Mary's College belongs to the Roman Catholics, and is a very flourishing institution. It was incorporated in 1805

as a university, and has an extensive library, and philosophical and chemical apparatus. Its officers are a president, vice-president, and nine professors. In addition to the above there are extensive academies at Somerset, Elkton, Washington, Talbot, Charlotte Hall, Frederick County, Garrison Forest, Franklin, (Alleghany County,) Centreville, Rockville, Hagerstown, Cambridge, Hillsborough, West Nottingham, and Harford County. The arrangements for the promotion of knowledge in this state are highly liberal, and bid fair to produce the best effect.

The Roman Catholics in this state have one archbishop, the metropolitan of the United States, and 30 or 40 churches; the Methodists are numerous; the Episcopalians have 57 ministers; the Presbyterians, 11 ministers, 6 licentiates, and 1,058 communicants; the Baptists, 15 churches, 12 ministers, and 680 communicants; the German Reformed, 9 ministers; the Friends are numerous, and there are some Mennonites, one congregation of Unitarians, and one of the New Jerusalem Church.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

WESTERN SHORE.					
Counties.	Population, 1820.	Population, 1830.	Chief Towns.	Distance. A.* | W.†	
Alleghany, N. W.	8,654	10,602	Cumberland	165	132
Anne Arundel, M.	27,165	28,295	ANNAPOLIS		37
Baltimore, N.	33,663	40,251	{ Baltimore	30	38
Baltimore, city	62,738	80,625			
Calvert, S.	8,073	8,899	Prince Fredericktown	63	56
Charles, S.	16,500	17,666	Port Tobacco	69	32
Frederick, N.	40,459	45,793	Frederick	76	43
Harford, N. E.	15,924	16,315	Belair	53	61
Montgomery, W. M.	16,400	19,816	Rockville	52	15
Prince George's, S. M.	20,216	20,473	Upper Marlborough	23	18
St. Mary's, S.	12,974	13,455	Leonardtown	72	63
Washington, N. W. M.	23,075	25,265	Hagerstown	101	63
EASTERN SHORE.					
Caroline, E.	10,018	9,070	Denton	44	81
Cecil, N. E.	10,048	15,432	Elkton	80	88
Dorchester, S. E.	17,759	18,685	Cambridge	62	99
Kent, E.	11,453	10,502	Chestertown	47	82
Queen Anne's, E.	14,952	14,396	Centreville	32	69
Somerset, S. E.	19,579	20,155	Princess Anne	107	144
Talbot, E. M.	14,387	12,947	Easton	47	84
Worcester, S. E.	17,421	18,271	Snowhill	127	164
Total	407,350	446,913			

DIFFERENT CLASSES OF POPULATION IN 1830.

		Whites.	Slaves.	Free coloured persons.
Males	. . . . .	147,315	53,429	34,920
Females	. . . . .	143,778	49,449	28,022
Total	. . .	291,093	102,878	62,942

* From Annapolis.

† From Washington.

Baltimore, in population the third city in the United States, is built round a bay which sets up from the north side of the Patapsco river, and affords a spacious and convenient harbour. Annapolis, the seat of government, is on the south bank of the Severn, two miles from its mouth; population about 2000. Fredericktown, is a flourishing town on a branch of Monococy creek, forty-two miles west of Baltimore, and has about 5000 inhabitants. It is in the midst of a fertile country, and sends great quantities of wheat and flour to Baltimore. Hagerstown is situated in the fertile valley of Conecocheague, on the west bank of the Antietam Creek, twenty-seven miles northwest of Fredericktown. Cumberland is at the head of boat navigation on the Potomac. The ports of entry, besides Baltimore and Annapolis, are St. Mary's, on the Potomac; Nottingham, on the Patuxent; Havre de Grace, at the mouth of the Susquehanna; Chestertown, on Chester River; Oxford, on Treadhaven Creek, which falls into the Choptank near its mouth; Vienna, on the Nanticoke; and Snowhill, on the Pocomoke. At each of the three last mentioned places a considerable amount of shipping is owned.

THE DISTRICT OF COLUMBIA

Is a tract of ten miles square, about equally divided by the Potomac, ceded by the states of Maryland and Virginia to the general government. [The Potomac had been considered the centre of the British provinces in North America, long before the organization of a federal government was ever thought of by the north or the south. A few of the wise men of Virginia had, in their political forecasts, drawn upon their imaginations so far as to think it within the limits of conjecture, that through the Potomac the great western lakes would find a highway to the ocean, and the immense interior bordering on them would be opened to the advantages of commerce with foreign nations. When, or how, this was to be brought about, was not distinctly understood. The subject was one of those great matters of feeling and reasoning commingled, that are often the precursors of investigation and effort, and for many years remain as impressions and presentiments, before the event gives to vague conjecture the character of prophecy or foreknowledge. These opinions were gaining ground in Virginia, from age to age, and fastened themselves on the mind of Washington, from his earliest years; and so deep, that when his reputation had reached the acme of human glory, he was willing to risk some portion of his fame in making every exertion to direct his countrymen to this great national object,

connected with the government of the United States, and the future welfare of his country; but no place was now precisely designated.

In March, 1791, the President of the United States was authorized to appoint commissioners to lay out this city, and prepare suitable buildings for the government before the year 1800. By an act of May, 1796, the commissioners were authorized to borrow money for the advancement of the buildings, and to pledge the lots that had been given to the United States, as well as the faith of the government, to refund the loan. In 1798, there was an act passed, supplementary to the aforesaid, to hasten the progress of the public improvements. So far were the public buildings finished, that, in April, 1800, an act was passed authorizing the President to remove, with all the departments, from Philadelphia to the Federal City, which had been previously named the City of Washington, in honour of the President; and in pursuance of this act the government was removed and commenced operations in the city of Washington the first day of December, 1800. It cannot be denied but that the character, wishes, and influence of Washington, had no small share in fixing the seat of government. Like all other of his acts it has proved to have been dictated by wisdom, justice, and forecast; for the site is one of the finest in the world for a city. From the hill on which stands the capitol, the most noble view presents itself to the eye of the beholder that the imagination could paint. From the north, round to the south, a circular line of high grounds is seen, making within them the interior of an immense amphitheatre; which, it is said, resembles the appearance of Rome from some of the elevations in or near the *Eternal City*. The east view is extensive, but not bounded by high lands; the horizon sinks with the power of vision. On the south, the broad and peaceful Potomac is seen for many miles, extending to Alexandria, and even to Mount Vernon. The whole panorama is bold, magnificent, picturesque, and yet soft and beautiful; it only requires the moral consecration of long past events, the massy piles of ancient grandeur, the deep and solemn recollections of the mighty dead, to make the impression, at this view from the capitol, such as crowds on the mind when one views the Vatican or domes of St. Peter. It was laid out on a noble plan, but it will require the lapse of half a century to fully develop all its beauties. The eye of practical utility is long in discovering the harmonious proportions that philosophical forecast designs for the completion of distant ages. The colossal figures of Praxiteles were the subject of derision among mi

nor artists, who did not foresee the elevation for which they were made ; but when placed in the lofty niches of the temple, his master designs found their exact situations, and breathed harmony and sweetness on every beholder. The city of Washington struggled with every difficulty in its commencement. The great founder did not live to see it the seat of government ; he died a year before the consummation of his wishes.

We had at the time of the beginning but few native artists to assist him, and the foreigners he employed had many preconceived opinions at war with his great plans. Economy was the order of the day, and it was hard to make frugal statesmen understand, that judicious expenditure, on a broad scale, would, in the end, be the most prudent course. They considered the necessities of a session ; he, the requisitions of ages. The country was straitened in her finances, and the great mass of the legislature mistook the expansion of republican simplicity and grandeur in building a city, for regal munificence and aristocratic calculations ; and of course every broad plan was narrowed down, and every detail cramped by the wants of the treasury. Other causes transpired to increase these difficulties. When the site of the federal city was fixed upon, speculators from every quarter of this country, and also from abroad, flocked in, to share in the chances of gain. Instead of forwarding the enterprise, they did much to retard it, by giving the lands a fictitious value and by keeping up nominal prices until there were no real ones. It was a fair subject of speculation, but it was managed badly. The agriculture of the surrounding country was not prepared to give a ready and an abundant supply to the calls of the newly congregated population, and the whole concern went sadly on, year after year : at this period the market for provisions was scanty, fluctuating, and often exorbitant ; and sometimes it was hardly possible to procure wholesome provisions, at any rate. The dwelling houses in general were small and inconvenient ; and not only the citizens, but public functionaries, and political dignitaries, were crowded into narrow lodgings ; and amidst the most anxious struggles for appearances among the leaders of fashion, the nakedness of the land was often seen by the sojourners as well as felt by the inhabitants. The great mass of the population suffered in some way or other, and but few of the comforts of life, then, as well as at present, so fully enjoyed in the cities of the United States generally, were known in Washington.

In summer the streets were in a good measure deserted, and in winter all was bustle and confusion.

The streets were without sidewalks or pavements, and in this naturally humid climate and soft loamy soil, the mud was frequently deep and troublesome. The greater part of the visitors, and many of the members of congress, boarded in Georgetown. The English goods shops were there also, and many of the best wine and grocery stores. These daily inconveniences were annoying to the members of congress, and they were in ill-humour when any call for money was made for the city ; and it was evident that the dislike to Washington, as a permanent seat of government, was fast advancing to a determination to remove it. The goodly streets and comfortable rooms in the dwelling houses in Philadelphia were remembered, and nothing but reverence for the name of Washington kept those feelings from breaking out into acts of legislation.

This was the state of things up to 1814, when the calamity which at first was supposed to have given a finishing stroke to all the hopes of the city fell upon it. In August, of that year, it was taken by the British without much bloodshed. The troops brought to defend it were well enough, and might have been made good soldiers, if there had been union, concert, and energy among the leaders. Civil and military authority and influence were jumbled together, and confusion, defeat, and disgrace, followed. The blame was shifted from one to the other, and has not as yet settled precisely any where ; but error, and gross error, must rest somewhere.

The whole country was mortified at such an event, although it reflected no great honour on the enemy. The capitol, as far as it was finished was burnt ; the President's house, the public offices, and the public property of the navy yard. The whole city resembled "*the skin of an immolated victim*," and every appeal to the sympathies and pride of the country was made. When congress next assembled, after a few struggles for the removal of the seat of government, the most vigorous steps were taken to restore the city to tranquillity, and to repair the public losses. It being once settled that pride and justice would not suffer the removal of the seat of government, private enterprise followed public spirit. The corporation of the city seemed to be animated with a new soul, and individuals, relieved from the fear of change, risked all they could command in real estate. Landed property arose in value, and hope, energy, and active business, took the place of despair, listlessness, and wasting, repining indolence. New streets were opened, dwelling houses and stores were then erected. The trade came to the city, the boarders left Georgetown and came to Washington, and a new face was

put on every thing in the city; churches were built, institutions of learning arose, and large, if not ample provision, was made for other necessary improvements on the face of nature. This work has been going on ever since the close of the war; but it must be pleasant to the citizens of Washington to reflect, that when all things are taken into consideration, that they are not indebted to the government, in equity, for one dollar for all their grants and favours; but that, in truth, the government is indebted to the city for more than a million of dollars, putting a fair value on the property now owned by the United States within the city which cost them nothing. Blessings are said to come in clusters; for as soon as the city began to flourish, it became healthy. The low grounds were drained, and the fever and ague, once prevalent, are now rarely known among the evils of Washington; and at present the city is decidedly the most healthy of any in the United States, or perhaps in the world. The water of Washington is of the best quality, and can be brought to every door in the greatest abundance, at a very moderate expense. This was provided for in the charter given to the city under the administration of Mr. Jefferson.

The schools in Washington are respectable, and instructors very well supported. The spirit of religious freedom is as manifest here, as in older cities. Toleration, in general, is a growth of long experience and sound information; here intolerance had neither precedents or law. The restraints on the exercise of liberty are fewer here than in any other city known to civilized man; and yet the morals of the people are good, and every year growing better. The whole population of the city have been misrepresented as to manners, morals, habits, and dispositions. No people are more kind, or more hospitable, or have better feelings than the Washingtonians. The bland Marylander, the lofty Virginian, and intelligent, shrewd Eastern inhabitant, coalesce, commingle, and amalgamate, until the virtues of all are seen united in the most. As they become less dependent on congress, the more elevated is their standard of mind and morals. When they looked to the members of congress as superior beings, who might annihilate the city by a vote, the very vices of the legislators were copied, and the effect was bad. Taken as a whole, the members of congress were not of the highest order for imitation. Men are seldom virtuous in nodies, in which, in most cases, but little individual responsibility is felt or acknowledged. The corporation are assuming an energy of character worthy of freemen, and are looking at the true interests of the city, and the citizens are uniting their efforts

for the prosperity of themselves and neighbours. The patronage of congress, the attention of the corporation of the city, and the efforts of individuals, are now beginning to be seen and felt. In former years, their exertions were not properly appreciated, because they could not be seen in their effects; they were actually laying the corner-stone deep in the mire and water, where it was difficult for the nicest observer to fairly calculate the value of means used to produce ends; now all things are seen most fully; and effects are in proportion to labours; and whatever is done is visible in the improvements of the city. The city is indeed an emblem of our nation in its growth and character, if not at first, certainly in the later periods. It was most assuredly afflicted in its commencement, had no great seasons of prosperity in its early day, and in the end, owed its glory and stability to the outrage done upon it. The streets are now provided with ample sidewalks; new squares are opened, the streets are graduated, and put in a proper state to be ornamented with trees and fountains. The Ohio and Chesapeake canal, which has been begun, and will be put in operation by the enterprise of individuals, the spirit of the corporation, and the liberality of congress, is one day to be the pride, the convenience, and the source of prosperity to the city. The trade will increase, which will increase the number of inhabitants, and afford them many advantages, by bringing fuel and provisions to the city, and reduce the prices of all the necessaries of life, to as low a scale as that of the most favoured cities of the United States. The Washington market, with a little alteration, might be made as good as any we know of. The glades of Virginia furnish beef, pork, and butter, of the best kinds; and the immediate neighbourhood, with a little care and attention, would be sufficient, and more than sufficient, for all the demands of vegetables and poultry. The soil and climate are well suited for all the fruits of the temperate zone. Peaches, plums, apples, and almost every other fruit, are, or may be raised, of the first order. Washington is the happiest region of flowers. A garden here might be made to yield something for the basket of Flora for nearly three quarters of the year. With a small expense a fountain might be made in every garden, to refresh the vegetation in the warmest seasons of the year. After the most prominent sites for business are filled up in the city, a better taste will prevail in erecting domicils, and those dwellings a little removed from the bustle will not be complete or satisfactory without a garden of flowers.

To pass from the *dulce* to the *utile*, there are fine building materials, in abundance, in or near the city.

or can easily be brought to it. The city abounds in the best of clay; and bricks can be furnished to any extent, at a few weeks notice; and fuel can easily be procured to burn the greatest number of kilns that may be set up. Ornamental trees for the high way or malls would be of rapid growth, much more rapid, take the whole number and variety of ornamental trees together, than that of any climate more southerly or northerly in this country. It is seldom that the winter is severe enough to injure them, and droughts in the summer are not common. Showers are frequent; the clouds following along the Shenandoah and the Potomac, in the highlands, spread over the country where the Potomac assumes a broader surface, and gives a freshness to the vegetation along its banks. The soil is porous and quickly imbibes the rain, so that no stagnant waters are found to originate diseases in the hottest weather. There is none of that spongy, humid state of the atmosphere here, so common at the north in August, generally denominated dog-days. The heat of Washington is not greater at any season than at Boston or Montreal; but is more oppressive by its long continuance, and the trifling change in the atmosphere from noon to midnight. This may be, and indeed is, exhausting; but in this season there are but few prevalent diseases; and the deaths that happen are often among those who have not been the most prudent, or whose constitutions have been broken and decaying in previous years. Man is subject to the first great denunciation of his Maker every where, *dust thou art, and to dust shalt thou return*; but he is as much privileged here, as any where, to escape it as long as possible. In fact, nature has done enough for the city to make it one of the most delightful abodes in the world; art now must do her share. Capital, industry, and business, are now only wanted, to give interest, beauty, yea, more, splendour, to all in and about Washington; commerce is wanted to obtain this capital and to secure prosperity to the city, but it can never be so great and all-absorbing as to endanger the welfare of the city by those fearful fluctuations that large commercial cities are liable to. None of those sudden changes in the markets can effect the great mass of the citizens, when but a small part of them are engaged in commerce, nor is it so near the sea as to fear that its usual supplies can be cut off by war or blockade. The back country is sufficient for all exigencies, and permanent requisitions for the main articles of life, and it will have easy communication with the eastern and southern cities by steam-boats and rail roads. If a real and not a fictitious value is given to property in the city of

Washington, it can not fail to advance most rapidly. The general temperature of the climate, the certainty of wholesome supplies of provisions, the chances of good schools, which will be found here if they are not common now; numerous and well organized associations, united to the easy access to genteel society, on those terms which can not be common in other cities, will induce many respectable families, with but moderate means, to make this a place of residence. It is a question, with many, if this golden age will ever come; but who can doubt it? Look at the changes of the last ten years, and say if these have in them no promising augury? If the citizens do not abandon real for imaginary right—if the congress of the United States do their duty, as we trust they will—the prosperity of the city of Washington is certain. Some of the citizens of the District of Columbia are anxious to be represented in congress; but it would be a miserable policy to change the hold they have on the general government for legislative protection, for the honour of having a single representative in congress. The government is growing rich, and the fostering hand of power will be, hereafter, extended more liberally to the district than it has been.

With industry, enterprise, prudence, and harmony the city of Washington may be made a place of trade, manufactures, and learning. The trade will be very considerable when the canal is opened, and the surrounding country catches the spirit of the age. Manufactures will of course go *pari passu* with the demand of those articles that can be made here cheaper than elsewhere. In addition to the water power in the neighbourhood, fuel can be afforded cheap, by way of the river and canal, either in wood or coal for steam-engines. A well balanced business extending to all the common branches of industry might be carried on here for the prosperity of the city. Taste, and the arts, must grow up where there is no sudden influx of wealth, no deep commercial speculation, whose success gives no settled plans for mental improvement, and whose reverses damp the ardour and dry up the aliments of learning. Those cities whose income have been the most regular, not those which at seasons have been the most wealthy, have given the most encouragement to the arts. It is true the Medici, the great Florentine merchants, were patrons of the arts; yet not from the success of any particular enterprise, but from a settled plan to spend so much of their income as they could spare for this purpose, and they made as regular appropriations for letters and the arts as for household expenses. It is not with the excess of wealth that learning

flourishes, but with the judicious use of it. Pericles ornamented his native Athens to the delight of his own, and to the wonder and admiration of succeeding ages, and yet his revenues were not large; but who ever heard of the artists, or of the men of letters patronised by Cræsus. A national University to be established in this city, was contemplated by that great father of his country, Washington. His views were expanded and noble. The University was not only to be one in name, but in truth a place of letters and sciences, with the arts, both useful and ornamental in their train; a place where all that is known should be taught. Such a University, besides diffusing pure knowledge, would do much towards breaking down the prejudices that exist between the different sections of our country. Educated together, the youths of the north and the south, the east and the west, would scan each others' merits in their early days, and find out each others' mental powers. Such an education would give them opportunities of knowing each, too, when they came into active life, and assist them to form accurate opinions of each others' powers and capacities, and fitness for particular offices. Such a university would be a resort for men of taste and leisure, who with their families would come to attend the lectures of the professors of the university; as none but distinguished men could hold these offices. In truth, whatever way we look into our country's welfare, or however bold and sagacious our reach may be, on close inspection we shall find that the mind of Washington had been there before us, arranged our anticipations, and marshalled all our array of thoughts; and he with equal clearness saw all the difficulties we had to encounter, and the virtues it would require to overcome them. He prayed the nation might possess them; he believed it did, or would, so that his beloved republic would escape the fate of all former republics, whose histories are satires on the stability of governments and the virtue of the human race.

We are now, in fact, the only republic on earth; those so called in South America, and hailed with such enthusiasm by the lovers of liberty, are at present only mock-suns on the clouds formed by our rising brightness. The temples of South American liberty have not as yet been purified from the stains of the idols which inhabited them. Superstition and ignorance, and the sounds of strife and bloodshed, as yet drown the bustle of the comitia. They have ample means in their hands, and they have the wishes of the better part of mankind for their success. We have believed, and still fondly hope, that the American republic is not to be joined to those of

former ages, over which the plough-share of desolation has been driven, and on many of whose brightest deeds the pall of oblivion has fallen. That the fears of the timid may prove idle, that the anticipations of the wise may be realized, and the hopes of the most sanguine be fulfilled, should be every patriot's prayer; but neither prayers, or wishes, or hopes will avail, without enterprise, energy, learning, virtue and perseverance; all these are in the people, and if they be true to themselves they will perpetuate their liberties. Their destinies are in their own hands. The responsibility of this age is tremendous, and it will be increased with every succeeding one. The pillars of the temple are *knowledge* and *virtue*, and as long as these remain unbroken the edifice will stand; but faction, like the strong man, may break them down and strew destruction around; but this evil may God avert.

The capitol of the congress of the United States is a very noble building. The order is called Corinthian; but, in truth, it is a medley of all orders. The whole edifice is now completed. It covers an acre and a half and 1820 feet of ground. It has been an expensive building, having cost the United States nearly three millions of dollars. The square on which the capitol stands contains more than twenty acres, and is laid out in a very handsome style, and is filled up with trees and shrubbery in a flourishing state. The dome of this building is the third in point of size in the world; next to St. Paul's, and before St. Sophia's; but this building has been so often described, that I shall not attempt it; but give you a few remarks upon the ornaments of the building, which have not been so particularly mentioned.

Several artists of note have, from time to time, been employed on the capitol, and it bears marks of their taste and talents. They have ornamented the inside of the dome and other parts of the building with the labours of their art. Over the western door of the dome is a group in bass-relief, representing the preservation of Capt. John Smith from the wrath of Powhatan, by the kind interference of his daughter, Pocahontas. This is the work of Capelano, an artist of considerable talent; but he had seen more Italians than Indians, and his savages are Italian banditti, and his intended child of the forest an Italian queen. In this picture, however, notwithstanding all its defects, there is more variety of expression in the countenances of the group, than is generally found in stone. This work attracts much attention, and elicits many criticisms; but it will continue to be admired, in spite of its faults. Smith was a hero whose name

is imperishable; his life has more of romance in it than that of any other man in the annals of history. Over the east door is a representation of the landing of the Pilgrims at Plymouth, 1620. The Indians on the rocks, the boat, the shore, the sea, are all well executed; but the artist mistook the character of the comers to the new world; he has given the religious adventurers the hat of the ancient Pilgrim, and the dress also; when nothing would be farther from the truth. They were puritanical adventurers, and not crusading pilgrims. The subject is one much better for the pencil than the chisel; but it was given to illustrate a portion of American history, and the artist was told the story by those who, probably, did not precisely understand the capacities of his art, and he set about it as it was, a subject dictated to him, and which some body else would have been engaged to execute, if he had remonstrated against it. The Pilgrims of that day never thought of their glory in stone. The pen and the pencil have secured their immortality long since. The sculptor was Causici.

Over the north door is sculptured Willian Penn, making his treaty with the Indians, in 1680. He is holding the parley, in the fearlessness of innocence, with the savages, who seemed to have caught the same spirit and to be governed by the same peaceful principles. This treaty is worthy of all praise, for it was kept inviolate for seventy years; but the moral sublimity of the subject must be fully understood before you can relish the design. There is neither beauty or attraction in it, taken by itself. The capacities of the art do not reach such a subject. The painter would do better here also. "*Gods, not men, should breathe in stone.*" They are only seen in naked majesty. The modern succinct dress in marble may be made by skill so as to be endured, but never to be admired. Phidias could not have given immortality to a modern martinet, in dress, with all his frogs and taggery. The sculptor would have preferred the Winnebago, in his war dance, almost in native nakedness, to one so bedizened.

On the panels between the doors, looking above them, are several fine heads in bass-relief. One of Columbus is so near a resemblance to some fine pictures of him, that it is probable the sculptor had hit upon something near a true likeness. The head of Sir Walter Raleigh is also a fine one, resembling the best prints of him. They are richly deserving a place here. This talented but unfortunate Englishman, deserves to be remembered in a country on whose shores he made a vigorous struggle to plant a colony. It was not his fault if he did not succeed.

The heads of la Salle, and Sebastian Cabot, are rough statuary, but have considerable expression and life in them. They, too, merit a place in this pantheon, if enterprise and success are subjects of reward in this way. These are strong, and severe pieces of physiognomy, but not without talent and character. They could not be recommended as models, nor are they so recommended; but they are worthy of attention and notice.

Over the great eastern door, outside of the dome, there is a head of Washington, taken from a picture, or bust, of an earlier age in Washington's life, than is seen in Stuart's great picture. The bust has a striking likeness to the head of the late Judge Washington. It is a laboured production of Capelano's chisel. It is supported, to speak in the language of heraldry, by Fame, with her clarion on one side, and by the genius of Immortality, ready to place the wreath on his brow, on the other. It is admired by many, and is certainly a specimen of very good proficiency in the art. But it is beyond the art, and skill, and genius of Canova, to give us a just idea of Washington. The image in our minds was all perfect; the eye could not be satisfied with any effort, however mighty, to give it body and tangibility.

It was reserved for Luigi Persico to produce by patient labour, and unquestionable skill, united to the soul of genius, a work that will immortalize the sculptor, and do honour to our country. It is an ornament for the tympanum of the east front of the capitol. The figures are colossal; the design is full of meaning, and yet is marked with great simplicity. On the right of the spectator is seen Hope, leaning on her anchor, and extending her right hand to the skies, directing her looks to the Genius of America, a still loftier figure, in partial armour. Hope is describing to the Genius some of those visions of glory which are crowding on her soul; some of those unborn ages of her beloved republic; while the Genius of the Nation, with dignified mien and placid countenance, points over a third figure, which is Justice, of a size in keeping with the others, and seems to say, we ask nothing that we are not entitled to by the sternest decisions of the goddess. The eyes of Justice are not, as usual, blinded, but are opened on the day, that she may see and judge all that passes under the sun. Between Hope and the Genius of America, there is an American eagle, a noble piece of statuary; the talons grasp the emblematical weapons of defence, with characteristic power. The breast, the wings, the tail, are full of life and strength, as is the head and beak of majesty. The head of the eagle is turned to the Genius, and "*with eye retortive looks*

creation through." The easy, elegant, and natural flow of the drapery, the fine finish of the hands and arms, and the graceful attitudes of these figures, take away, even when you are close to them, all those impressions of coarseness which susceptibility and taste have felt at a near inspection of colossal figures. It is not in nature to love the person of a giant. It was only through the medium of his deeds of generosity and valour that Hercules won the hearts of those that praised him. Between the overgrown and the diminutive exist the forms of symmetry, grace, and beauty. That art must be exquisite that gives us those huge dimensions, as it were, directly in our eye-shot, and still contrives to take off the general impression of coarseness. Mr. Persico's work is now to be examined from the ground only; the proper line of vision being extended more than a hundred feet from the object. At this distance the figures appear about the size of human beings, full grown. I have no hesitation in saying, that they are far superior to any thing of the kind in this country, entirely free from that hoyden air, or that prominence of parts, often made in works of this sort, to catch the gaze of the tasteless spectator. This group appears all life, celestial life; spirits communing with spirits, in the dignity and calm repose of upper natures, without a single throe of mortal thought-bearing.

After having said so much of the work, it is proper that I should say something of the artist. Mr. Persico is a Neapolitan, of about thirty years of age, or perhaps he is a little older, and full of the inspiration of his art. The clash of parties does not interest him, or the animated debate detain him but for a moment. The gayeties of the saloon, or the festive board, have but few charms for him, notwithstanding he possesses the mercurial temperament of his nation. Distinction in his art is the predominant passion of his soul; and if he looks at a fair one ever so earnestly, it is only to find some line of beauty, or some grace of form or motion, to transfer to stone; or, if he listens to an orator in the glow of his genius, and when the light of his mind is beaming on all around him, it is only that he may catch all this to give it to after ages, when the image of the speaker has faded from the memories of living men.

The ornaments of the Superior Court Room are not numerous. The only one worthy of particular attention is a group opposite the bench of justice. On the left, as seen from the bench, is a figure too lank and lean for a cupid, or an angel; but is probably intended for one or the other of these supernatural beings, or perhaps for the Genius of the constitution. The figure has wings, and holds the con-

stitution of the United States in its hand. On the head of the figure, whatever it may be, is a glory, or a shekina. This is in bad taste. It is attempting too much, and therefore produces a failure. All the other parts of the design are classical. This is from sacred history. The middle figure is Justice sitting in a chair, (Phidias or Praxiteles knew nothing of such a seat for the goddess,) with her right arm leaning on her sword, and holding the equal scales in her left. The face of this figure is excellent, and the drapery flowing and easy. Her proportions are rather more delicate than those in which the ancients exhibited the inflexible goddess. Before her sits the bird of wisdom, perched near some volumes of law; but the owl is formed in the modern school; and the capitol to a goat, Minerva would not know her bird if she should see him so beaked, so feathered, so trim and dove-like, unless she should guess it out by recognising her sister Justice in the form of this belle, or resort to her divinity to discover the whole group in their transformation. This room is one of deep interest to every lover of his country. To see seven quiet, good looking men, covered with a slight robe of black, without enough of the insignia of office to tell them from so many pall bearers, sitting together, listening to the arguments of men from every state in the Union, on great and important questions, of municipal, civil, and international law; and thus without any emotion or excitement, settling all the numerous conflicting opinions that have grown up in this republic since its formation, is a specimen of the moral sublime, unequalled in the annals of civil or ecclesiastical history. These oracles of the Delphic cave have as yet been free from the corruption or fear of executive power, and uninfluenced by party strife in the halls of legislation. As long as this sanctuary is unassailed, and talents and integrity are selected and maintained in this branch of government, so long will it be the palladium of American liberties; but wo betide the hour when political rancour shall come within these walls, to poison the fountains of justice, or to weaken her arm. The bickerings above them in the senate chamber, may pass away, and the many boisterous and idle speeches be forgotten, while the country is safe; but once pollute this hall, and the guardian Genius of the liberties of this country will leave it for ever.

The president's house is a magnificent mansion. It stands near the centre of one of the largest squares of the city, on an eminence, nearly a mile and a half west from the capitol. The building is of the Ionic order, with a southern and a northern front. It is one hundred and seventy-five feet long

and eighty-five in width; it has two lofty stories above the basement. There are thirty-one rooms of considerable size within the walls. As you enter the north door there is a fine large hall, called the entrance hall. At the left of this is the eastern room, whose length is the width of the house, making a room in the clear eighty feet in length, forty feet in width, and twenty-eight feet in height, with four fire places, two of them of elegant marble jams, mantelpieces, &c. From the south of the Hall you enter the elliptical room, which is the general audience room on levee nights. The east room was intended for a general audience room; and the elliptical room to receive foreign ambassadors, and public functionaries, on occasions of ceremony; but the east room not having been furnished, until lately, the elliptical room has been used for all public ceremonies. East of the elliptical room is the *Green Drawing Room*; this is of a medium size for such an edifice. On the west of the elliptical room is the *Yellow Drawing Room*; on the west from this is the *large Dining Room*, of a fine size, and farther west still is the *small Dining Room*, and beyond this is the Porter's room.

The north front of the upper story contains six rooms for various purposes. The south front has seven rooms; the ante-chambers, the audience chamber, and Lady's parlour; this is directly over the elliptical room, and of the same size of that. The basement story contains eleven rooms, kitchen, pantry, butler's room, &c. These are cool and convenient in the summer, and warm in the winter from the massy walls of the edifice.

Some of the furniture of the house is elegant, but in general it looks much abused from the crowds of careless visitors. The Lady's parlour may be said to be superbly furnished, but this remark does not extend to many other rooms. Within twelve years past congress have expended eighty thousand dollars in furnishing this mansion, and there was some old furniture of the former stocks. Some portion of the plate is elegant, and is now worth twenty thousand dollars, or more.

The ornaments are sparse and not of high order. In the second southeast room there is a map of Virginia; a portrait of Bolivar; a bust of Washington, and one of Americus Vesputius. These latter ornaments are very good specimens of the arts. In the third room, the ante-chamber, there is an engraving of the declaration of independence in a gilt frame. In the yellow drawing room there is a portrait of Washington from the pencil of Stuart. In this room there is a French piano, which it is said can not be

kept in tune. In the days of omens, when Memnon's harp responded to the ray of the sun, or Æolus first breathed among the reeds, this might be thought to have a mysterious bearing on the jars of the cabinet councils; or at least, a Greek Poet would have said that the genius of the place was not always happy and tuneful. This palace belongs to the people, and should be adorned with the best specimens of the fine arts the country can produce. The works of the great painters should hang upon the walls, and those of their sculptors fill every niche. To the tenants of this house it can not be of much importance, for to them it is only a caravansary, where they throw down their wallets to cast a horoscope to lay spirits and raise spells, and their hour comes, and they take up their march without restoration to health, or a forgiveness of their sins. Such is the omnipotence of the public mind in a free government. The whole square, except a few spaces for iron gates, is surrounded by a substantial stone wall of excellent masonry. The four public offices of the secretaries are within these walls. The view from the north front is extensive and beautiful, but from the south front it is more extensive and still more resplendent, embracing in its range a lovely prospect of the Potomac.

The site of the house is elevated about sixty feet above the river, and the descent is quite gradual to it. On the south eastern side of the wall there is a stone arch for a gateway: it looks, from the antiquity of the style and the colour of the material of which it is made, as if it had stood centuries defying the climate. Two large ancient weeping willows, one on each side of the arch, add much to its venerable appearance. These trees have not grown up since the date of the federal constitution. They are older than the city's charter. They were provincial seedlings, now national monuments. It is said that an accomplished lady of the *Great House* in former days, when congratulated upon her elevation, remarked with a smile, "I don't know that there is much cause for congratulation; the President of the United States generally comes in at the iron gate, and goes out at the *weeping willows*."

MERIDIAN HILL, as seen from the president's house, is situated about three quarters of a mile west of Columbia college, is a handsome seat, built by Commodore Porter at great expense, which has been the temporary residence of Mr. Adams, the late president of the United States. It probably derives its name from the expectation that an observatory would be erected there by the government of the United States. Toward such an object there were some steps taken,

In the year 1821, the president of the United States authorized, under a resolve of congress, William Lambert, Esq. a distinguished mathematician, to take proper measures for ascertaining with precision and accuracy the longitude of the Capital from Greenwich or Paris. He was assisted in taking his observations by William Elliot, Esq. who had an extensive astronomical knowledge and experience in the use of instruments. This commission was executed to the satisfaction of the president. The government also sent an experienced mathematician, Mr. Hasler, to Europe, to purchase, or cause to be made, all such instruments as might in his opinion be necessary for an observatory. A most costly and admirable set of instruments was procured, probably equal, or superior to any set in Europe; but the observatory was not erected, and when it was recommended by the next president, the whole was ridiculed and lost. The costly materials are nearly ruined by rust and neglect. It is not made the duty of any department to take care of them. If this plan of erecting an observatory had been carried into effect, we should now make all our calculations of longitude from Washington, instead of Greenwich, which might have been called an era of scientific independence, which it behooves this country to declare as soon as possible. They have scarcely a map or chart of their own, out of their own territories. They have in the midst of every boast been guided more by the light of other minds than their own, a mortifying fact to those of their countrymen who are willing to make every exertion to wipe away this stain from their "*proudly emblazoned escutcheon*," and to make this equal with other nations in contributions to the common stock of knowledge. Individuals have done much, government but little, in the cause of science. The government have done nothing of a public nature in the city to assist in measuring space or time. There is not even a public clock to regulate the hours of business or pleasure, or to tell the weary and restless applicant for office how pass his long and tedious days of heats and chills, in waiting for a definite answer from a department of the government. Indeed, I had almost forgotten to state that there is a sun-dial on the front of the department of state. This was probably put there as the device of some philosopher, to teach the passing generations of politicians a solemn moral; the design was a happy one, for it has often marked the hours of a great man's fame, and seen them pass away as a shadow on its face.

THE LIBRARY OF CONGRESS.—Congress had provided but few books for the general reader, until Mr. Jefferson offered his library to them as nucleus for a

future national library; the journals, laws, and state papers were about all the representatives of the United States could have access to in their public reading room, until the Jefferson library was purchased. It was a cheap one for the United States, considering how many excellent papers in the form of speeches, tracts, pamphlets, and books, it contains, upon revolutionary history. The arguments urged to bring on the contest, the reasoning required to keep the spirit of patriotism alive, to induce the people to form and accept a form of government, to secure the liberty they had achieved, are found in this library in greater abundance, than perhaps in any library belonging to an individual in this country. In forming this library, Mr. Jefferson had exercised his judgment, no doubt; but much of the most valuable part of it was the growth of the times of struggle and determination, and if they had not been gathered then, would have been lost by neglect, and they could not now be called back by any conjuration. The collections in this library of history, general politics, statistics, and scientific works and classical literature, is considerable; the deficiencies of Mr. Jefferson's library, have been supplied by the appropriations of congress for the library department; the library committee are members of congress of a high literary and scientific reputation, and what they recommend seldom meets with any obstacle. They have with great taste and judgment purchased many rare works of great value to scholars, as also many of high taste and fashion for those who have only time to indulge the eye upon wire-wove or vellum paper, or imperial bindings, or exquisite engravings. The expenditure of about five or six thousand dollars a year is a trifle for the government, and yet, by this appropriation, in twenty years this will be one of the first libraries in the world; as it now is, it probably stands the fourth in this country; but there are several of the minor class that are at present nearly equal to it, in point of numbers.

There is a very respectable library belonging to a company in the city. It contains between five and six thousand volumes, and these are very well selected. It is as rich in American literature as any miscellaneous library of its size in the United States.

This library is increasing under judicious management, and promises to be in a few years an extensive concern.

Each branch of the government has an accumulating library. That of the state department is of considerable magnitude; but is of very little value at present to any one, but those in its immediate neighbourhood. This is not as it should be; the

library of the state department ought to be kept in a spacious room, fitted with every convenience for taking notes and making extracts, &c. It should contain all the American works to be found in the book market, in proper order for the inspection of every visiter properly introduced. The sums now expended on European works are next to useless here; which under proper direction would, in the course of a few years, make up a very fine collection of American books. Of the current publications there are a considerable number of volumes deposited in that office by the laws of copy-right, and in addition to this supply, a few thousand of dollars annually would tell well in increasing the stock. The secretaries of state have generally been scholars, and it is therefore surprising that this library should not be found in a better state, one we mean more conducive to general convenience and the diffusion of information relating to our own country. It is but justice to say that these remarks apply to the library as it was before Mr. Van Buren came into office. It is to be hoped that he has made some reform in the premises.

The Columbian Institute was incorporated in 1819; it had existed for some time before this period as a literary and scientific society. It was founded upon a noble basis, to promote learning in all the various branches of arts, sciences, and letters. Its members are resident, corresponding, or honorary. Contributions are exacted of the resident members, of papers upon such subjects as each member chooses to write upon; and there has, from time to time, been a good deal of talent exhibited. These papers are kept on file, and will be useful to the society hereafter. Congress has granted to this institution the use of several acres of land for a botanic garden and other purposes. By the liberality and exertions of some of its members, this garden has been well laid out, and many of the trees and shrubs of other countries have been transplanted and nurtured there. This, with a little of that liberality that congress has shown to some other institutions or other projects, would flourish; for there are several literary and scientific men who would spend many of their leisure hours in the botanic department of the society, if they could do it to advantage.

Congress has furnished the society with a convenient room under the library of congress, where the collections of books, minerals, and curiosities, are deposited. Resident members are, it is said, receiving encouragement from corresponding members, by way of donations, books, and minerals, and works from their own pens; and after the bustle of politics is over,

it is to be hoped that the watchful eye of the scientific and literary part of congress will see the wants of the society, and that the liberal part will be disposed to aid in giving it something annually, to carry on their useful labours. The members are most certainly labouring for the good of the community at large, not for themselves; and therefore deserve encouragement. It has talent sufficient among its members to do honour to the reputation of the country in the literary and scientific world; as yet, their publications have been but few, but those are of a high order, and have been well received every where. The first was a Eulogy on Mr. Jefferson, by Mr. Harrison Smith. This is not only valuable as a composition, but it is more so as arising from a particular acquaintance of Mr. Jefferson, who knew him in the ease and freedom of domestic life. The second was an ample memoir of John Adams, by a relation, friend, and familiar acquaintance, Judge Cranch. This is a chaste, plain, sensible discourse upon the merits of the great patriot of the east. It abounds in facts and judicious reflections, and will be a valuable document for the future historian. The next was of a more general character, from Mr. Southard, the secretary of the navy. The general strain of the orator was to show that it was the duty of government to patronise the arts and sciences in this country. His doctrines were sound and most manfully enforced, and should have made a deeper impression on the national legislature than we fear they have. The last was from Mr. Everett, and, as might have been expected, was a splendid performance. *Line upon line, and precept upon precept*, are still wanted to rouse our government to become the patron of letters, the arts and sciences, and the friend to the learned men of the country.

The society, in the summer of 1827, met with a great loss in the death of Robert Little, who had been a most active member. He was a thorough scholar, a zealous promoter of letters and sciences, and deeply engaged in the welfare of the Columbian Institute. The death of a man of virtue and good sense is a calamity at all times, but the loss of an active, intellectual member, of an infant society, is incalculable. Mr. Little was an ardent, but practical man, and had the faculty of infusing his enthusiasm into others less apt to kindle than himself. He was devising liberal things for the Institute, which would soon have been carried into effect if he had been spared a short time only, to have matured his plans, and made a communication of them. Foreigners have as yet a right to smile at this government for their neglect of learning, but we trust that the groves of the academy are

growing up; that the Pierian springs are gushing from the hills; and that the muses will not for ever be frightened away by the spasms of party, or neglected for petty electioneering debates.

Men in office in Washington, have been, and are, too busy to make books; they hardly read them. Some of the different documents from the several Presidents, and members of the successive cabinets, are works of great merit, of their kind. Among the most conspicuous of these is the Report of Mr. Adams, when he was secretary of state, on weights and measures. This is a most learned report, and is creditable to the nation, as well as to the author. The first book, giving any account of the District of Columbia, was written by Col. Lear, who was an aid to Washington, and afterward consul to Algiers, &c. This book is now out of print. Since that time, several descriptions of the District and city have been given by residents, travellers, and all sorts of people—some of them full of errors and absurdities. The best accounts were from the pen of the librarian of congress, G. Watterson, Esq.; and much careful detail may be found in Elliot's *Washington Guide*. Samuel Harrison Smith, Esq., formerly editor and proprietor of the *National Intelligencer*, published a history of a session of congress. It was the session of 1801. The volume contained 190 pages, and gives a condensed view of the proceedings of that year.

S. Blodget, finding how scanty the statistical information was in the country, wrote a work upon that subject, and brought his calculations, conjectures, data, and results, down to 1806. Although not a perfectly accurate book, it was a good one, and gave a good deal of information to the people of the United States, on subjects they did not know much about, or had reasoned too little upon. Mr. Blodget was among the first settlers in Washington, and, like many other sensible men, was romantic in his calculations on the probable yearly increase of the population of the city.

B. Woodward published a work in Washington, on the substance of the sun, which made some noise in its day.

Mr. Watterson, we have before mentioned, has written several popular and useful books—"Letters from Washington;" "Course of Study;" "L. Family;" "Tabular Statistics of the United States," &c. The public are much indebted to him for much useful information, conveyed in a good style. Some of the sketches of the great men in and about Washington, which are to be found in his works, are splendid and original, and give a very fair view of their character.

The public are much indebted to a lady of Washington, Mrs. Harrison Smith, for two very clever novels, one called "A Winter in Washington," the other, "What is Gentility?" The peculiar habits and manners of the fashionables, and of those who would be fashionables, are hit off with admirable tact, and the prevailing follies of the society of the District exposed and satirized with no little neatness. The latter of these books, particularly, should be read by those who are in the *chrysalis state*, and whose wings and colours are growing.

Dr. Thomas Ewell, of Georgetown, published a volume of Chemical Discourses, which were well received; and Dr. J. Ewell has published in Washington an improved edition of his work, the *Medical Companion*.

Thomas Law, Esq. has, although now nearly an octogenarian, lately published a book upon currency. He is a man of no ordinary powers of mind. His life has been an eventful one. In England, his native country, he was considered a man of mind. In India he was distinguished for his financial talents, and was a great benefactor to the natives, by his judicious plans for their relief. He was the companion of Teignmouth, and the friend of Sir William Jones. Active and enterprising, he saw the accounts of the establishment of our federal city, and he hastened to this country to identify himself with its growth, *from the corner stone to the setting up the gates thereof*. He purchased largely of the soil, built on an extensive scale, suggested ten thousand plans for the improvement of the city, and for the prosperity of the nation; but the slow, doubtful, and often strange course of congress, came not only in his way, but in the way of all those deeply interested in the welfare of the city; and he has spent the days of his maturity and wisdom in unavailing efforts for the improvement of it. It is happy for him, however, that he has lived to see the dawn of a better day for Washington; and if he can not stay here long to enjoy it, as a good man he will rejoice in the hopes of his friends and descendants. If his disappointments have been numerous, yet it can not be said that they have soured his temper or hardened his heart, or that his tenants have felt his resentment, because he was deceived by those who could have favoured his plans. In this world, the insults received from those above us, are often repeated by those below us, in pitiful and aggravated forms.

One of the most useful books printed in Washington, is the *National Calendar*, by Peter Force. It contains, among other things, much useful information. The first number of this work contains some

excellent historical remarks upon the District of Columbia and of the city of Washington, which have furnished authentic matter for most of those who have written any thing upon the subject since.

Gales and Seaton have, at great expense and trouble, printed three ponderous volumes of congressional debates. They have not, as yet, been paid for their trouble. This is truly a national work; and for the fame of the present race of politicians, and the benefit of those who come after them, should be continued. Individuals, however enterprising, can not afford such expenditures on works that are in fact rather printed for other ages than our own. Gales and Seaton are well qualified, in all respects, to give these debates to the public, freed from party biases, and properly pruned, and brought down to a reasonable length; and also capable of separating the chaff from the wheat, and freeing the reader from the labour of getting rid, by his own mental process, of all the crudities of legislation.

There are several bookstores in Washington, in the hands of business men, who publish many current works, and are usefully engaged; but the most important establishment in the city is P. Thompson's. His store is not so large, perhaps, as some in New York, Boston, or Philadelphia; but, for rare editions of valuable works, in many languages, is not surpassed in the United States. It contains most of the best editions of classical works to be found in Europe, and also many works of great taste in the printing and binding, &c. To the visiter, this bookstore is what bookstores were in the days of Johnson and Burke, and others, a reading room for classical gentlemen, who were desirous of seeing more than they were able to buy. The proprietor is himself a gentleman of education, and is often an index, and learned commentator, on his most profound volumes, when the examiner wishes for, and needs a guide, which is often the case in this country, where scholarship is not a profession, except with a few. The writer, for one among many, has to acknowledge his polite attention and valuable assistance in frequent examinations of matters out of the common path of literary intelligence.

The city has not been wanting in newspapers since its first establishment. The *National Intelligencer* was commenced in 1800, when the city was actually made the seat of government. For thirteen years it was published three times a week, and since that time it has been a daily paper. During the first of its years, there was a weekly paper connected with it, and growing out of it, called the *United States Gazette*. Since it has been published daily, there has

been a tri-weekly paper for the country, bearing the same name, and containing all the best matter of the daily, without the advertisements or other mere city concerns. It has a most extensive circulation through every part of the union.

The *Weekly Register* was first published in 1807, and in 1808 changed its name to the *Washington Monitor*. It was edited by Mr. John Colvin, whose life was passed mostly in literary labours in Washington. He was a man of abilities, and some of his writings show superior acquirements.

In 1809, Dinmore and Cooper published the *Washington Expositor*.

At the commencement of the war, in 1812, the *Washington City Gazette* was published by William Elliot.

The *Hive* by Mr. Lewis.

The *Senator* by Mr. Cummings.

In 1823 the *National Journal* was got up and published twice a week. The next it was a tri-weekly paper; but in a short time became a daily print.

From 1822 to 1824 the *Washington Republican* was in existence. This was ably conducted, but it was at length absorbed in the *Journal*.

In 1824 the *Telegraph* was established, and within a few years was purchased by Duff Green, who conducts it now. This is an extensively circulated paper.

A short time since there was a religious paper coming out once a week, called the *Columbian Star*, which has since been transferred to Philadelphia. It was rather a religious than a political paper, and was edited with a brisk religious spirit, but had no offensive sectarian cast.

John Colvin, in the latter part of his life, commenced his *Weekly Messenger*, which publication his wife conducted for several years after his death.

A periodical called the *Theological Repository* was kept up a while by the contributions of the clergy.

The *Columbian Register* is a religious paper, has been published in this city for nearly two years, and is still continued. It is a religious paper of a very tolerant spirit.

A literary paper has lately been got up here, called the *Washington City Chronicle* which promises fair to be a valuable repository of useful knowledge.

The *Globe*, a paper devoted to politics, has been established in Washington, which is edited with ability. It is the government journal.

To no one is Washington more indebted than to Mr. Jefferson. He, with the assistance of a French engineer, laid out the city of Washington on a novel plan; and many of the regulations of the corporation proceeded from him.

Thomas Jefferson was born on the 13th day of April, 1743, at Shadwell, in Albemarle county, not far from the seat where he died. He was educated at William and Mary's College, and graduated with distinction, when quite young. He was a great lover of learning, and particularly of natural philosophy. With the celebrated George Wythe he commenced the study of the law, and became a favourite pupil. Mr. Jefferson was never distinguished as an advocate, but was considered as a good lawyer. Soon after he came to the bar, he was elected a member of the house of burgesses, and in that body was duly appreciated for his learning and aptitude for business. He at once took fire at British oppression; and in 1774, he employed his pen in discussing the whole course of the British ministry. The work was admired, and made a text-book by his countrymen. In June, 1775, he took his seat in the Continental Congress, from Virginia. In this body he soon became conspicuous, and was considered a firm friend to American liberty. In 1776, he was chosen chairman of the committee that drafted the Declaration of Independence. This instrument is nearly all his own, and was sanctioned by his coadjutors with few alterations. In 1778, Mr. Jefferson was appointed ambassador to France, to form a treaty with that government, but ill health prevented his accepting of this office. He succeeded Patrick Henry in 1779, as governor of Virginia, and continued in that station two years. In 1781, he composed his Notes on Virginia. In 1783, he was sent to France to join the ministers of our country, Mr. Adams and Dr. Franklin. He joined them in August of that year. In 1785, he succeeded Dr. Franklin as ambassador, and continued performing the duties of that office two years, when he retired, and returned home. In 1789, he was made secretary of state, under Washington, in which situation he was highly distinguished for his talents. This station he resigned in 1793, and retired to private life. In 1797, he was elected vice-president of the United States, and took his seat as president of the senate on the following 4th of March. In 1801, he was elected president of the United States, which office he held for eight years. After completing this term, he retired to private life, in which he spent his days in philosophical pursuits, until the 4th of July, 1826, when he expired, just fifty years after penning the Declaration of Independence. His course was one of his own. Never lived there a politician who did more than Thomas Jefferson to bring his fellow-citizens to his own opinions.

Time will settle the amount of his merits. They were considerable; but of the course of his policy, his countrymen have had, and for a long time will have, different opinions.

There are some fine seats in Washington, several miles from the heart of the city—two of great beauty; one built by Commodore Porter, the other by Joel Barlow, who was a philosopher and a poet, was born at Reading, in Connecticut, in 1758, and received his education at Yale College. While quite young, he was distinguished for his taste in polite literature, and took at once a rank with Dwight, Hopkins, Humphrey, and other poets, who had struck their youthful lyres in College Hall. He was an ardent patriot, and, before the close of the war, was a volunteer soldier, and chaplain in the American army. He wrote many orations and essays, in times when the hearts of his countrymen required to be warmed, or their minds to be enlightened. Soon as he saw our constitution in operation, he hastened to France, and became an active patriot in that country. He had, for some time, contemplated his great poem, and he finally published it in France, with the title of "The Vision of Columbus," and dedicated the work to Louis 16th; but in the progress of the revolution in that country, he grew more and more liberal in his principles, and, changing the name of his epic to that of Columbiad, he enlarged it, and dedicated it to the times. It is truly a work of genius, but it is much questioned whether he made it better by his emendations. While in France he wrote some essays that had a great reputation at the time, particularly some addressed to privileged orders, which the nobility of any country would do well to read, at the present day. His prose is written in a chaste, neat style, and bears no mark of that vitiation of taste which is sometimes found in his poetry. Barlow was a favourite with Mr. Jefferson, who, when he came into power, appointed him consul to Algiers, and afterwards a minister to France. Before he went out to France, Mr. Barlow had resided for some years in Washington, at which place, about three miles from the capitol, he built himself an elegant house, on a picturesque spot, which he named Kalorama, and which is so called at the present time. Barlow died on his way to Wilna, to meet Napoleon, in 1812. His works were severely handled by the critics of his day, both in England and in this country. He had offended many by his avowal of skepticism in regard to the Christian religion, after he had once been a minister at the altar; and his democracy was too thorough-going for his old friends in America: but the future historian will say, that Barlow was a man of talents, of extensive acquirements, of an amiable disposition; and the critics of another age will forgive many things in his poem, that his contemporaries con-

demned. Several beautiful, and one superb edition of the Columbiad have been published in this country. The parts of this work on the great principles of imagination or the general doctrines of liberty, will never perish, but will give thrills of pleasure to freemen yet unborn; but those portions of his work written to catch the gaze of the passing hour, will secure no other immortality, but that which arises from their associations.

The major-general of the armies of the United States holds his head-quarters at Washington, from whence he issues his orders to all forts and fortresses extended throughout this immense country. Since the war, the office has been kept with great regularity and efficiency; first under General Jacob Brown, and now under Major-General Alexander Macomb. The efficiency of the army of the United States is not to be found in the number of its soldiers, but in the learning and abilities of the officers in the service. Most of the officers are well-informed young men, who, emanating from every part of the United States, received their education, scientific and military, at the school at West Point, where they imbibed high notions of discipline and honor, which give them prime advantages in their profession. Intelligence is the soul of an army. Men may be found any where, and can be disciplined in a short time; but it requires years to make engineers, tacticians, and disciplinarians.

CLERGY.—The religious denominations are as numerous in Washington, according to the number of inhabitants, as in any other place in our country; but if there is no great harmony among them, there is no discord. Each pursues his own course, and preaches his own doctrines, unmolested by controversy or opponents. Congress protects all, and cherishes none. They have a fair field for the display of their talents, in any form of Christian doctrine. There is, or rather has been, some opposition to the Unitarians; but that is nearly over; and the other denominations are learning a lesson from the Rev. Dr. Matthews, of the Catholic faith, *to do good, walk humbly, and love mercy, and live in unity with all mankind*. The clergymen of Washington, as a body, have as good a share of talents as those of other cities, and the religious character of the people stands as high. Considering that the city is a thoroughfare, it is astonishing that there is no more fanaticism prevalent here. A learned, pious, evangelical body of divines, is the greatest blessing to any place, in a free country, that can be imagined. The pulpit with them is a High School, in which, in addition to a common code of ethics, the great doctrines of divinity are taught, the precepts of salvation are explained, and heaven brought down to earth. Whatever there is deep in philosophy, beautiful in morals,

charming in literature, or sweet in affection, are made familiar to man by the zeal and learning of the pulpit. It brings man to a familiarity with his Maker, and takes away his enmities to his fellow men; it gives a high zest to life in the hopes of futurity, and takes away the darkness and horror from the grave, and the sting from death, by the light it gathers and sheds from the gospel. This country has been advanced half a century in its intelligence by the pulpit, notwithstanding that much time and breath has been wasted in idle disputes, and frivolous distinctions, in points that were nugatory, or in commentaries that were absurd.

The bar of the District of Columbia is numerous, for the population and business; but it is certainly respectable in point of talents and learning: but there does not appear to be that *esprit du corps* among them, as exists in some parts of our country, among the gentlemen of the bar; but they are gentlemanly and courteous towards each other. Men, similarly educated, are alike in every part of the world. If law be a science, it is only the science of bringing particular cases under fixed and settled rules. Morals change with every age, and opinions fluctuate with every hour, and old enactments give place to new; but that sagacity which brings all the powers of the mind to the standard set up, whatever it may be, makes the good lawyer, whether the possessor be in Turkey or in the United States.

Congress has made a very good judiciary system for the District of Columbia. A District Court has been established here, upon the same principles as those of other districts in the United States. This bench is filled by Judge Cranch, whose talents, learning, patience, and integrity, are well known to all who have the honour to know him.

There is also a Circuit Court for the District of Columbia, which is held four times a year. Judge Cranch is Chief Justice of this court; Judges Thurston and Morsell, are assistant justices. This court finds some little inconvenience, at times, from the singular fact, that what is law in one part of their jurisdiction, is not law in another; the statutes of Virginia, and in like manner those of Maryland, being still in force in those parts of the district which formerly belonged to those states; and in the growth of these states, there is no proof that they were ever so kind as to copy much from each other.

The professors of the healing art are numerous and highly respectable in Washington. Most of them are men of good education, and not a few of them have seen considerable practice before they came to this city. Some of them have served in the

army or navy, and others were educated abroad, or in the first schools in this country. They deserve much credit for getting up a medical school, which has been in operation but a few years only; but the lectures delivered here, in the different departments, are of a high order, and have been delivered without any of that quackery, that struggles for effect; and that produced, thinks of nothing else. The graduates are well instructed; and if, as yet, they are not numerous, have been respectable for acquirements. It is connected with Columbia College, and is composed of a Dean and Faculty, made up of professors in such branches as are generally taught in such an institution.

The Washington City Orphan Asylum was got up by certain charitable ladies of distinction and worth in this city. With indefatigable labour and persevering exertion, they have laid the foundation of an excellent seminary, as well as an asylum for those helpless infants that have been deprived of their parents. It is not confined to one sex, but is intended to exercise charity on a broad scale. A lady of property, Mrs. Van Ness, gave the corporation a lot of ground, in a pleasant and central situation, in Tenth Street; and on it the association have erected a suitable building, for their kind purposes. The corner stone of this edifice was laid in the summer of 1828, with solemn and impressive ceremonies, accompanied with the orphan's prayer, and the good man's benison. These asylums have, after the fashion of this hospitable and industrious age, taxed the ladies of this city with making articles of taste and fancy, which, when mingled with other articles purchased for the occasion, are exposed at a *Fair*, and the sums realized from the sales are directed to the benefit of the institution. The Sisters of Charity have their fairs also.

Every age has something or other, for good or evil, to mark its existence. The brightest constellation of this age of improvement is its charities. They grow up in every society, they extend to every climate, and thus reach all mankind.

There has been established, by the Catholics in this city, for several years past, an institution of *charity* for orphan females; and connected with it a *primary school* for day scholars. This is a most excellent institution, under the care of intelligent Sisters, whose vows extend to a devotion of their time, that can be spared from their religious exercises, to the educating of the infant female mind in religious duties and useful knowledge. This delightful, but onerous task, is performed with true zeal, and untiring constancy, by those Sisters whose sole busi-

ness is to do good, and wish well to mankind. The school is an admirable one; each Sister has her branch of studies to attend to in these schools, and is not directed to others, but pursues that until teaching in it is easy and familiar. Their buildings are convenient, their grounds are laid out with taste, and every arrangement unites judgment, economy, cleanliness, and industry; and, in fact, all the household virtues are constant handmaids of religion with the Sisters of Charity. These schools are every day becoming more justly appreciated, and the knowledge of their merits more fully developed. It would be agreeable to the writer to enter into some of the minute facts relating to this institution, in which there are no pecuniary views, no particle of worldly ambition, none of the pride that seeks for praise only. They are ambitious only as far as their fame may benefit the houseless child of want, whose yearnings have elicited their pity, and whose cries have gone up to heaven for succour. The charities of this age are not confined to males or females; they belong to the warrior in the day of his glory, and to the female in the hour of her beauty and dominion; they preserve the peaceful walks in the feuds of party strife, and in the change of political power. Sectarians and oppositionists are all active in extending the influences of charity; and if she is made, by those of limited knowledge, and of narrow views of man, accessory to bigoted notions, and persecuting zeal, this is only accidental and short-lived, or occasional, while the great acts she is called to perform, in every country, are, as a whole, pure, lofty, and noble.

I can not pass over the Tyber without saying one word of that pleasant little stream.

"AND WHAT WAS GOOSE CREEK ONCE, IS TYBER NOW," was wittily said, and ought not to excite the indignation of our countrymen as much as it has done against the English Anacreon; for our part we will forgive him this splenetic remark, and all the other vituperations he was guilty of, save and except his attack on Washington himself, for the pleasure he has afforded us in his exquisite poetry since; and we can easily believe that he who wrote *Sacred Melodies* to atone for writing amorous ditties, has, in his heart, repented for his sins, in attacking the greatest patriot of all times. It falls out that if there is a satire in the line, there was not much truth in it. The name of the stream was not changed by way of making great things out of little, from Goose Creek to Tyber; Goose Creek belongs to the vulgate of the boys, who sailed boats, and shot ducks in the stream; but the old deeds of more than a century ago, call it by the

name of Tyber Creek. It is said that a landholder who lived on what is now called Capitol Hill, finding the strong resemblance in the natural panorama of the surrounding country, named his little territory Rome, and the brook at the foot of the hill Tyber; but this little brook may be of more importance to mankind than that Tyber which "*flows fast by the Eternal City.*" For this pure little stream, when other streams shall "*mourn their fountains dry,*" may be conveyed in abundance to every part of the city, to refresh and adorn it, when the malaria has made Rome a desert.

The manners and customs of Washington demand a moment's attention:

I have already in the historical sketch of the city, glanced at the general character of the inhabitants, but it may be well to speak of them more distinctly, as they are often either ignorantly or wilfully misrepresented; sometimes, indeed, caricatured by those who imagine they are praising them. And it must also be remembered that their general character must be every day changing, from the increase of population, and the great influx of strangers; who, finding now what could not have been offered them in the earlier years of the history of the city, comfortable quarters and good fare, are willing to make longer visits, and become more acquainted with the manners and habits of the citizens of Washington. The amiable and scholar-like Warden, now resident in Paris, who has written in a distant land a good history of this country, gave about thirteen years ago, a lively description of all he saw worthy of record in the District of Columbia, having spent the summer there; but many things have altered since that time, and what was then as much as could honestly be said of them, must fall short of the truth now. He seemed to feel alarmed for the society of the city, in contemplating the number of beauties married from the circles of fashion, by the members of congress, from time to time. This laudable custom still continues; but there are no complaints of it as an evil, at present; in fact, the dread of it as such, could only have existed in a bachelor's brain; and if he had thought as much of the doctrine of political economy, as of his affectionate gallantry, he would soon have discovered that "*the supply is increased by the briskness of the demand.*" The manners of a people are at all times affected by the greater or lesser importance they attach to themselves; particularly when this self esteem is made up in a considerable degree of the space they may fill in the public consideration. The people of Washington know, that whatever transpires in the city, of a public nature, is a matter of deep interest to the rest of the

nation. In such a place, the affairs of government are constantly discussed. The movements of the executive, and the doings of the legislature, are instantly known to all, and commented upon by all classes. The interest, however, which may be felt, is not precisely in proportion to the magnitude of the subject; but oftener according to the bearing it may have on themselves. The appointment of a minister or the recall of one, or of a judge of the Supreme Court, or the rapid advancement of a naval or military officer, great things in themselves, because they are important to the country, make up only an item in the mass of daily information; but the removal, or appointment of a clerk, or auditor, or any head of a Bureau, is an affair directly within their vision, and comes home to their business and bosoms. But all these things, however pleasant or painful they may be for the moment, are hardly remembered a day, and certainly are forgotten in a few weeks, in the *quid nunc* appetite of a free people. These changes produce a sort of mercurial disposition in a population; which may, and in fact does, tend more to their happiness than that apathetical character which despotic governments give to a people. Politics are all-absorbing topics of this republic. More time is certainly taken up than necessary; but still a goodly share of our time, and many exertions, are necessary to keep the lamp of knowledge and the torch of liberty in pure and regular burning, and to save it from being deadened by the chills of indifference, or blown out by the fierce storms of faction. Restlessness, anxiety, and the sickness and fever of party feuds, is the tax that intelligence has had, in every age, to pay for freedom; it was never sustained without it. The men of Athens, it is said, spent more than a fourth part of their time in politics. In Rome, the busy tribunes kept the people awake to their interests, and jealous of patrician power. The struggles between the nobles of Venice and the merchants, kept the whole population involved in endless disputes. In England, for centuries, public attention has been exerted, and great struggles made, for public and private rights.

The history of this country is a history of political discussions, and perpetual struggles for liberty. The people have, from the first settlement of the country, devoted more than a quarter part of their time in learning their rights and in defending them, and in building up their institutions. All, from twenty years of age to the grave, in any change of years or situation in life, are daily engaged, among other things, in politics. Washington is the centre of all this bustle, the very ear of Dionysius, in which every remote

whisper is reverberated. The complaints of the great and the little are all heard here; the feeble, who mutter, but dare not speak aloud; the bold, who rave in their disappointments, and invoke the curses of the upper and the nether world—are also heard. The people of this city have the finest opportunity of becoming acquainted with the talents and characters of the prominent men in the country. They see at every touch and turn the obsequious minion, with his simpering and flatteries, and the consequential patron, bloated with “a little brief authority.” They not only see, but read, and read pretty thoroughly too, the true character of men in power. It falls to their lot often to see men one day surrounded by secretaries, foreign ministers, and a bowing crowd; who, on the next, pass off to private life, without a farewell salutation; and another set arrive, who bustle through their reign, and then sleep, either living or dead, with their predecessors. This proves the force and majesty there is in the people; but it lessens the importance of the individuals. To the great politicians of former ages, such a government, had it been truly sketched, would have justly been classed among the wildest fictions ever created; but its perpetuity is a problem the most timid need not a solution of. The intelligence of the community may safely be trusted in modelling anew, or repairing the defects of any form of government. There is no virtue or spell in any system of a constitution. The whole political safety, in a republic, consists in the purity and in the soundness of the great body politic.

The literary taste of the inhabitants now does them credit, and it is every day growing better. The visitors find but little time to devote to reading, and their previous acquirements are sufficient for all the demands of the occasion; and to the honour of the country, I speak of the ladies more particularly, these are sufficient for their purpose. In some of the prettiest, a close observer will see the lisp or drawl of the drawing room conversation, which is only a manner put on for the time. In the moments of intoxicated vanity from admiration and flattery, even the political philosopher looks wise, and straightens up; and can youth and beauty be expected to be more firm or insensible? The diplomatic corps at Washington have not, in former years, done much either to enrich, embellish, or enlighten the city. Those who have been sent here in former times, have, with some honourable exceptions, been of a secondary order of diplomatists, with their equipage and parties, and after making a dash, have hardly been heard of again. Many of them, no doubt, were men of talents; but there was no opportunity of displaying their intellectual powers

here. The corps are now, however, very respectable. The English minister is a scholar and a gentleman. The French minister, I make no distinction in their different ranks, is said to be a man of courtesy and learning; and those from Netherlands, Holland, and Russia, are thought to be men of fine manners and high intelligence. South America, in her infancy, has sent us a good share of talents; men of the most inquisitive minds, who are indefatigable in studying the political institutions of this country, and in making themselves acquainted with the manners and customs of it. This remark is not confined to the representatives of the new republics alone; for no man in Washington was more respected and loved for his amenity, frankness, integrity, talents, and patriotism, than the late Brazilian minister, Mr. Rebelho. His name is in every literary and scientific institution, and the poor have blessed him for his kindness. In former times, a man was thought to have every claim to society, who was known to be familiar with a baron, count, or minister; but the people are growing more republican every day, and the smiles of a diplomatist is not now the standard for the admeasurement of claims to society. Now and then a romantic girl is found flirting to catch an attache; but she is, fortunately, ninety-nine times out of the hundred, unsuccessful.

During the session of Congress, the amusements of Washington absorb no small portion of the attention of the visitors, as well as members. Political struggles produce a sort of dramatic influence on society; not that the theatre is very well attended—but for the short time it is kept open, it finds a very tolerable support when the press of visitors is great. The President's levees, and the parties of the secretaries, foreign ministers, heads of Bureaus, and those citizens who can afford to make parties, are frequent, and well attended. At these parties are collected the most distinguished men, not only of the nation, but many foreigners of note. The visitors, who do not think of distinction, like well enough to see what is passing, and they find easy access to the social circles, and mingle in the throng, to see and examine for themselves. It is not difficult to get an introduction to men of importance, and to pass a social half hour with them. These routs are rather to be remembered, than enjoyed at the moment. These parties are so crowded as to level all distinctions. Governors, generals, judges, and political managers, whose influence is something in a little district, are all lost in this congregation. Orators, whose speeches were fine at home, and doubtless raised a most noble flame among their political partisans, are astonished

at being overlooked ; and poets, whose works have been printed on wire-wove and hot-press paper, and sent to the ladies' toilets in silk or morocco binding, are mortified that not even a belle lisps a line of their works, or ever whispers their names. The traveller, who has seen every kingdom on which the sun looks down, is put precisely on a par with him who has just come down from the mountains, or out of the West, or from the East. Fashion is the bed of Procrustes, and all are suited to its dimensions. A whiskered dandy, a black-stocked, officer-like looking man, and a quizzing-glass attache, are all moving about, regardless of those they jostle or crowd. If you inquire who it is that pushes you out of the way to get at a partner for the waltz, nobody can tell you, and perhaps he hardly could himself, if you were to ask him, who he was ; no matter, he seems genteel, and that is sufficient for the hour. The waltz goes on, much to the gratification of the exquisites ; for belles—aye, grave matrons, are swimming round in the dance, if Dervise-like whirling can be called dancing, and you see blowsy impudence and simpering familiarity gazing with Asiatic voluptuousness upon seemingly unsuspecting innocence, made giddy by unnatural motion, or unmeaning flattery. There is not much harm in all this ; for each one is taught to play a part, and it is all acting. There is an apparently sober, quiet part of the joyous whole, who are insinuating the little rumours of the day ; of this lady's partialities, and of that gentleman's indiscretions, and without any decided ill nature, but just by the way of amusement,

"Distort the truth, accumulate the lie,
And pile the pyramid of calumny."

This is a picture of all societies, where persons unknown to each other, except from the introduction of the moment, assemble.

There can come no harm from our looking out of the limits of the city for a moment. The College of Georgetown is delightfully situated on an eminence, that commands a fair prospect of all around. This institution was established about forty years since. It is a Catholic seminary, and was made a University by Congress in 1815, with the power of granting degrees. The college buildings are commodious, and sufficiently elegant for all the purposes of a school. The library is respectable, and the system of education is liberal ; the modern languages are taught there, with the classical, and youths of all denominations are received as students. The faculties are composed of pious and learned men, and the young gentlemen I have known, who were educated there,

have been well instructed. The Catholic clergy of Maryland are in possession of handsome revenues, arising from large tracts of glebe lands, throughout the state. These revenues have been kept for the true purposes of religion and learning, and the ecclesiastical orders have never been charged with ambition, as they have in other countries, nor have they aspired to high offices in the state or general government. The Protestant denominations of every shade of doctrine have, unquestionably from principle, in some period or other of the history of Maryland, been openly and secretly hostile to the Catholic church ; but it has gone on with such a tolerant spirit as to disarm all sects of their enmity, and nearly all of their opposition. The clergy of Maryland protected those persecuted by the Church of England on one side of them, and those exiled by the Puritans of the East on the other. In a free country, all men should, in the article of religious belief, be persuaded in their own minds, and the constitution of every state should give equal protection to all creeds ;

"Tros, Rutulus ve, nullo discrimine habebo,"

should be the language of the lawgiver in every age and nation. In the District of Columbia, this principle is fairly acted upon, and the community feel its beneficial effects.

The Convent of Visitation is an object of deep interest to all who take a part in what may be emphatically called the glory of this country—its *education*. Seminaries for boys are sufficiently numerous in most parts of the country ; the people have now to refine and exalt their character, not add to their numbers ; but well regulated female schools are yet much wanted. This Convent was established more than thirty years ago, by Archbishop Neale, a most worthy prelate, and upon a most improved plan, with the piety and zeal of the order of which it is a part. There is infused into the constitution of it some of the most liberal principles of the age. The superior is elected by the sisterhood every three years, and is ineligible for more than two terms in succession. Thus the elective franchise in this country, in its most republican form, has found its way into "the convent's shade."

The number of Sisters, or nuns, is about fifty ; and they are all devoted to religious duties and to the education of females. The younger Sisters are set to keep an eleemosynary school, and do much good by diffusing correct principles and information among the poor ; but the most valuable part of the establishment is the boarding school for young ladies. This is in a most flourishing condition. The Sis-

ters themselves are highly educated, in every branch of science, and in all the current and fashionable literature of the age, as well as in the profound ethics and the sublime doctrines of the Christian religion. In this institution the great evil of most schools is avoided; this evil is to make one person teach many branches, and of course no one can be profound in all. Here, each sister selects her department, and never walks out of it; six or seven, therefore, are united as instructors in the same branch, and the indisposition of one or two does not interfere with the course of instruction in any branch.

The languages are taught here with great accuracy, and with a pure, lady-like, and natural accent, the charm of polished society. The system of education here, extends to the minute duties of housewifery, and the pupils graduate with a thorough acquaintance with the science of the kitchen and mysteries of the culinary art, without which no woman can be said to be all-accomplished.

The system of government in this school is admirably strict, not severe; decided, not imperative. There is no espionage; no making use of one to find out the faults of another; but their care and watchfulness are so sisterly and maternal, that the pupil is naturally moulded, not drilled, to good manners. Discipline is constantly going on even in those hours of relaxation in which girls left to themselves often acquire an awkwardness of manners that cleave to them for the whole course of their lives. Such schools are rare. The Ursulines have just opened one on the same plan, near Boston, which is flourishing under a most accomplished superior.

If this age has any thing to boast of over those that are gone by, it is in the difference of education, and the facilities it has invented to give a genteel education to female youths, without endangering the health, or diminishing the grace and beauty of their persons.]

Alexandria, an incorporated city on the west bank of the Potomac, is a place of extensive business, and of fashionable resort during the sittings of congress. It contains a court-house, six churches, and a theological seminary. The museum at this place contains, among its valuables, an elegant satin robe, scarlet on one side and white on the other, in which General Washington was baptized; a penknife with a pearl handle, given to him by his mother, when he was in his twelfth year, and which he kept fifty-six years; a pearl button, from the coat he wore at his first inauguration as President of the United States in the old City Hall, New York; a black glove, worn by him while in mourning for his mother; part of the last stick of

sealing wax which he used; the original of the last letter written by him, being a polite apology, in behalf of himself and Mrs. Washington, for declining an invitation to a ball at Alexandria; (it is penned with singular neatness, accuracy, and precision, and contains this expression—"Alas! our dancing days are over;") a beautiful masonic apron, with the belt of scarlet satin, and the white kid gloves, worn by him the last time he shared in the social ceremonies of the "mystic tie."

The Chesapeake and Ohio canal was commenced in 1828. The proposed length is 341 1-4 miles; the breadth, at the surface of the water, sixty to eighty feet; at the bottom fifty feet; the depth of water, six to seven feet. According to the plan of this canal, it will pass from the tide-water of the Potomac above Georgetown, and terminate near Pittsburgh, in Pennsylvania. Five miles from Georgetown, the canal is so planned that a branch may be constructed to Alexandria, another to Baltimore, and another to the navy-yard in Washington. The first estimate of the cost was 22,375,000 dollars, but it is maintained that the cost will not exceed 10,000,000 dollars. The United States have authorized a subscription of 1,000,000 dollars to the stock of this company. To be constructed by the Chesapeake and Ohio Canal Company. The charter was granted by Virginia in 1824, and confirmed by Maryland and congress in 1825.

The Baptists in this District have 18 churches, 10 ministers, and 1,658 communicants; the Presbyterians, 9 churches, 11 ministers, 5 licentiates, and 996 communicants; the Methodists, 1,400 members; and the Episcopalians, 5 ministers; the Catholics, several churches; and the Unitarians, 1 minister.

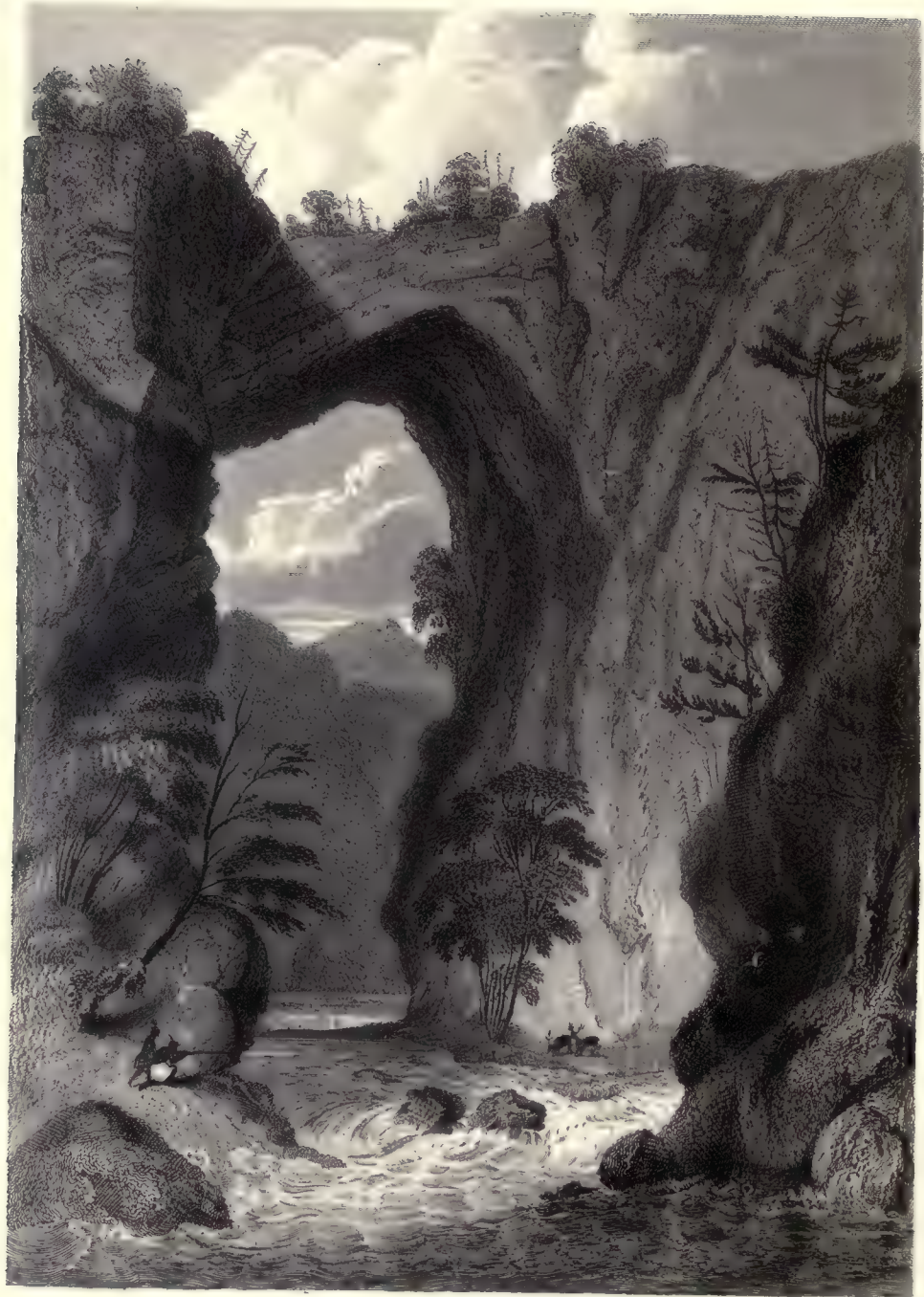
Population.

	1810.	1820.	1830.
Washington	8,208	13,274	18,827
Alexandria	7,227	8,218	8,263
Georgetown	4,948	7,360	8,441

VIRGINIA.

This is at once the most ancient and most extensive state in the union. It is bounded on the north by Pennsylvania, on the northeast by Maryland, on the east by the Atlantic, on the south by North Carolina and Tennessee, and on the west by Kentucky and Ohio. In longitude, it extends from 75° 25' to 83° 4'; and in latitude from 36° 30' to 40° 37'. Its greatest length is 430 miles, and its mean width upwards of 150 miles, comprising about 700,000 square miles.

Though the zones of Virginia are not very distinctly



Rocky Bridge, N.Y.

1840



HARRIS FERRY.

A VIEW OF THE RIVER SHENANDOAH & POTOMAC.

marked, each part has its appropriate character. The oceanic section of Virginia is its tropical climate. Latitude, exposure, and depressed level, all combine to give the Chesapeake counties a much more elevated temperature than is found in the interior. This difference is seen on vegetation. In the lower counties, cotton may be cultivated successfully, whilst the uncertainty of grain and meadow grasses evinces a southern summer. The middle, in all the Atlantic states south from Pennsylvania, we find to be the arcadia of the state. Middle Virginia is, however, blended with the mountainous, the former containing the whole or great part of the valley counties, Berkeley, Jefferson, Frederick, Shenandoah, Rockingham, Augusta, Rockbridge, Botetourt, Montgomery, Wythe, and Washington. The real mountain section, lies northwest from the middle, and extends to the Ohio. The extreme western part is, indeed, composed of a congeries of hills with alluvial bottoms, but the actual mountain ridges approach so near Ohio River, and the hills are in themselves so generally abrupt and lofty, as to give an alpine appearance to the country. Taken as a whole, central Virginia has the best soil, though in the mountainous part there is much that is excellent. With the exception of the south eastern counties, grain and orchard fruits are highly conge-

nial to Virginia, and their various products are the natural, actual, and, we may safely say, the permanent staples of the state. Of metals, iron ore is abundant in the central and western sections. Brine has been procured on the Great Kenhawa, and salt extensively manufactured.

Virginia is justly celebrated for the grandeur of its scenery. The natural bridge over Cedar creek, twelve miles south west of Lexington, is esteemed one of the most extraordinary natural curiosities in the world.* The passage of the Potomac through the Blue Ridge, at Harper's Ferry, is also celebrated.† There are several interesting caves, of which the most extraordinary is Wier's Cave, on the northwest side of the Blue Ridge. It is between 2,000 and 3,000 feet in length, and comprises various apartments, containing beautiful stalactites and incrustations, which display the most sparkling brilliancy when surveyed by the light of a torch. Near this there is another singular cavern, called Madison's Cave; and in one of the ridges of the Allegany mountains, is Blowing Cave, from which a current of air continually issues, strong enough to prostrate the weeds at the distance of sixty feet. One of the largest mounds in the valley of the Ohio is in Virginia, near the Ohio, fourteen miles below Wheeling. It is

* We give Mr. Jefferson's description from his Notes on Virginia.—"It is on the ascent of a hill which seems to have been cloven through its length by some great convulsion. The fissure, just by the bridge, is by some admeasurements, 270 feet deep, by others only 205. It is about 45 feet wide at the bottom, and 90 feet at the top; this, of course, determines the length of the bridge, and its height from the water; its breadth in the middle is about 60 feet, but more at the ends, and the thickness of the mass, at the summit of the arch, about 40 feet. A part of this thickness is constituted by a coat of earth, which gives growth to many large trees; the residue, with the hill on both sides, is one solid rock of lime-stone. The arch approaches the semi-elliptical form, but the larger axis of the ellipse, which would be the chord of the arch, is many times longer than the transverse. Though the sides of this bridge are provided in some parts with a parapet of fixed rocks, yet few men have resolution to walk to them, and look over into the abyss: you involuntarily fall on your hands and feet, creep to the parapet, and peep over it. Looking down from this height about a minute gave me a violent headache. If the view from the top be painful and intolerable, that from below is delightful in an equal extreme; it is impossible for the emotions arising from the sublime to be felt beyond what they are here: so beautiful an arch, so elevated, so light, and springing as it were up to heaven! the rapture of the spectator is really indescribable! The fissure continuing narrow, deep, and straight, for a considerable distance above and below the bridge, opens a short but very pleasing view of the North Mountain on one side, and Blue Ridge on the other, at the distance each of them of about five miles. This bridge is in the county of Rockbridge, to which it has given name, and affords a public and commodious passage over a valley which can not be crossed elsewhere for a considerable distance. The stream passing under it is called Cedar Creek; it is a water of James' River, and sufficient in the driest seasons to turn a grist mill, though its fountain is not more than two miles above."—*Notes on Virginia*, pp. 21, 22.

† The passage of the Potomac through the Blue Ridge is per-

haps one of the most stupendous scenes in nature. You stand on a very high point of land; on your right comes up the Shenandoah, having ranged along the foot of the mountain a hundred miles to seek a vent; on your left approaches the Potomac, in quest of a passage also; in the moment of their junction they rush together against the mountain, rend it asunder, and pass off to the sea. The first glance of this scene hurries our senses into the opinion, that this earth has been created in time, that the mountains were formed first, that the rivers began to flow afterwards, that in this place particularly they have been dammed up by the Blue Ridge of mountains, and have formed an ocean which filled the whole valley; that, continuing to rise, they have at length broken over at this spot, and have torn the mountain down from its summit to its base. The piles of rock on each hand, but particularly on the Shenandoah, the evident marks of their disrapture and avulsion from their beds by the most powerful agents of nature, corroborate the impression. But the distant finishing which nature has given to the picture, is of a very different character; it is a true contrast to the foreground; it is as placid and delightful as that is wild and tremendous: for the mountain being cloven asunder, she presents to your eye, through the cleft, a small catch of smooth blue horizon, at an infinite distance in the plain country, inviting you, as it were, from the riot and tumult roaring around, to pass through the breach, and participate of the calm below. Here the eye ultimately composes itself; and that way too the road happens actually to lead. You cross the Potomac above the junction, pass along its side through the base of the mountain for three miles, its terrible precipices hanging in fragments over you, and, within about twenty miles, reach Fredericktown, and the fine country round that. This scene is worth a voyage across the Atlantic; yet here, as in the neighbourhood of the Natural Bridge, are people who have passed their lives within half a dozen miles, and have never been to survey these monuments of a war between rivers and mountains, which must have shaken the earth itself to its centre." *Jefferson's Notes on Virginia*, pp. 17, 18.

about 300 feet in diameter at the base, sixty at the top, and the perpendicular height is seventy feet. It contains thousands of human skeletons.

This state has a large fund, the income of which is appropriated to internal improvements. Dismal Swamp Canal, twenty-two miles long, opens a communication between Norfolk, in Virginia, and Elizabeth City, in North Carolina. There are various other canals for the improvement of the navigation of the James, the Jackson, and the Shenandoah rivers.

No provision had been made for a general system of education, to be supported by the state, until the formation of the Literary Fund. Academies and colleges were established by the legislature, and the trustees incorporated, on the application of individuals. The colleges are, William and Mary, at Williamsburgh, founded during the reign of the sovereigns whose names it bears; Hampden Sydney, in Prince Edward county, incorporated in 1783; and Washington, at Lexington, originally Liberty Hall Academy; in 1796, its name was changed to Washington Academy, on receiving a donation of the shares in the James River and Potomac Companies, which had been presented by the legislature of Virginia to General Washington, and which he had declined to accept, unless permitted to turn their destination from his private emoluments to objects of a public nature; in 1812 its name was still further changed to Washington College, which it now bears. A college, to be denominated the Central College, was about to be established at Charlottesville, by the pri-

vate contributions of some of the most enlightened and patriotic citizens in Virginia, when the legislature, in appropriating the interest of the Literary Fund, provided for the University of Virginia. The commissioners appointed to determine the site of the University, selected the very spot intended for the Central College. The lands and other property of the Central College were then conveyed to the president and directors of the Literary Fund, and the University established on the proposed site. This edifice, in which all the orders of architecture are introduced, has been reared up under the parental care of Mr. Jefferson. Combining the effect of the scenery presented by the surrounding country with the plan and execution of the buildings, the University of Virginia is pronounced by competent judges to be equal, if not superior, to any thing of the kind in Europe. This institution, the pride of Virginia, which has had but little more than 200,000 dollars expended on it, (an inconsiderable sum, compared with the magnitude of the object,) requires nothing but the aid of a library and the necessary apparatus to put it into complete operation. In 1823 the legislature made arrangements, which, it is hoped, will speedily effect this desirable object.

The Baptists in this state have 337 churches, 192 ministers, and 39,440 communicants; the Methodists, 77 preachers and 27,947 members; the Presbyterians, 104 churches, 75 ministers, 15 licentiates, and 7,508 communicants; the Episcopalians, 45 ministers; the Friends are numerous, and there are some Lutherans, Roman Catholics, and Jews.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

EASTERN DISTRICT.						
Counties.	Whites.	Slaves.	Free Blacks.	Total Population, 1830.	County Towns.	Distance R.* | W.†
Accomac, E.	9,458	4,654	2,544	19,656	Accomac, C. H.	214 | 206
Albemarle, M.	10,455	11,689	484	22,618	Charlottesville	81 | 123
Amelia, S. M.	3,293	7,518	220	11,031	Amelia, C. H.	47 | 169
Amherst, M.	5,879	5,927	263	12,072	Amherst, C. H.	136 | 180
Bedford, S.	11,113	8,790	341	20,253	Liberty	145 | 223
Brunswick, S.	5,397	9,760	612	15,770	Lawrenceville	69 | 191
Buckingham, N. M.	7,172	10,928	245	18,351	Buckingham, C. H.	87 | 162
Campbell, S. M.	7,497	7,735	473	15,704	Campbell, C. H.	132 | 210
Lynchburgh, town	2,490	1,761	385	4,626	Lynchburgh	120 | 198
Caroline, E. M.	6,490	10,764	520	17,774	Bowling-Green	44 | 78
Charles City, E. M.	1,782	2,957	761	5,504	Charles City, C. H.	30 | 152
Charlotte, S. M.	5,583	9,433	236	15,252	Charlotte, C. H.	96 | 187
Chesterfield, E. M.	7,709	10,337	591	18,637	Chesterfield, C. H.	14 | 136
Culpepper, N. M.	12,044	11,419	563	24,026	Culpepper, C. H.	94 | 76
Cumberland, M.	4,054	7,309	326	11,689	Cumberland, C. H.	55 | 140
Dinwiddie, S. M.	7,709	10,337	591	18,637	Dinwiddie, C. H.	40 | 162
Petersburgh, town	3,440	2,850	2,032	8,322	Hampton	22 | 144
Elizabeth City, S. E.	2,704	2,218	131	5,068		96 | 199

* From Richmond.

† From Washington.

Counties.	Whites.	Slaves.	Free Blacks.	Total Population, 1830.	County Towns.	Distance.	
						R.*	W.†
Essex, E.	3,647	6,417	467	10,531	Tappahannock	50	169
Fairfax, N. E.	4,892	3,972	311	9,206	Fairfax, C. H.	129	21
Fauquier, N. M.	13,116	12,612	621	26,379	Warrenton	107	51
Fluvanna, M.	4,223	3,795	203	8,221	Palmyra	59	136
Franklin, S.	9,728	4,988	195	14,911	Rocky Mount	185	263
Gloucester, E.	4,314	5,691	603	10,608	Gloucester, C. H.	82	165
Goochland, M.	3,857	5,706	795	10,358	Goochland, C. H.	28	127
Greenville, S.	2,104	4,681	332	7,117	Hicksford	63	185
Halifax, S.	12,915	14,527	590	28,032	Halifax, C. H.	130	220
Hanover, E. M.	6,526	9,278	449	16,253	Hanover, C. H.	20	102
Henrico, E. M.	5,717	5,934	1,089	12,738	} RICHMOND		122
Richmond, city	7,757	6,345	1,960	16,060			
Henry, S.	4,058	2,868	174	7,100	Martinsville	207	299
Isle of Wight, S. E.	5,023	4,272	1,222	10,517	Smithfield	180	204
James City, E.	1,284	1,983	571	3,838	Williamsburgh	60	163
King and Queen, E.	4,714	6,514	416	11,644	King and Queen, C. H.	49	142
King George, N. E.	2,475	3,635	287	6,397	King George, C. H.	88	78
King William, E. M.	3,155	6,310	347	9,812	King William, C. H.	27	120
Lancaster, E.	1,976	2,631	195	4,800	Lancaster, C. H.	83	145
Loudon, N. E.	15,517	5,360	1,062	21,938	Leesburgh	153	31
Louisa, M.	6,468	9,382	301	16,151	Louisa, C. H.	54	110
Lunenburg, S.	4,479	7,233	245	11,957	Lunenburg, C. H.	91	213
Madison, M.	4,389	4,873	71	9,236	Madison	110	96
Mathews, E.	3,995	3,481	189	7,663	Mathews, C. H.	100	184
Mecklenburgh, S.	7,443	11,950	874	20,366	Boydton	118	224
Middlesex, E.	1,870	2,137	118	4,122	Urbanna	83	142
Nansemond, S. E.	5,143	4,943	1,698	11,784	Suffolk	102	224
Nelson, M.	5,186	5,946	122	11,251	Lovington	118	160
New Kent, E. M.	2,586	3,530	342	6,457	New Kent, C. H.	30	133
Norfolk, S. E.	8,180	5,842	966	14,998	} Portsmouth	116	219
Norfolk, borough	5,131	3,757	928	9,816		112	235
Northampton, E.	3,573	3,734	1,334	8,644	Eastville	174	244
Northumberland, E.	4,029	3,357	567	7,953	Northumberland, C. H.	92	151
Nottoway, S. M.	2,949	6,985	223	10,141	Nottoway, C. H.	67	189
Orange, M.	6,456	7,983	198	14,637	Orange	80	92
Patrick, S.	5,494	1,782	117	7,393	Patrick, C. H.	241	333
Pittsylvania, S.	14,690	10,992	340	26,022	Pittsylvania, C. H.	167	259
Powhatan, M.	2,661	5,472	384	8,517	Scottsville	32	138
Prince Edward, S. M.	5,039	8,593	475	14,107	Prince Edward, C. H.	75	176
Prince George, E. M.	3,066	4,598	700	8,368	City Point	34	156
Prince William, N. E.	5,127	3,842	361	9,330	Brentsville	104	48
Princess Anne, S. E.	5,023	3,736	343	9,102	Princess Anne, C. H.	137	240
Richmond, E.	2,975	2,630	451	6,056	Richmond, C. H.	56	118
Southampton, S. E.	6,573	7,755	1,745	16,073	Jerusalem	81	203
Spotsylvania, E. M.	4,685	6,925	310	11,920	} Fredericksburgh	66	56
Fredericksburgh, town	1,798	1,125	384	3,307			
Stafford, N. E.	4,713	4,164	485	9,362	Stafford, C. H.	76	46
Surry, S. E.	2,865	3,377	866	7,108	Surry, C. H.	60	183
Sussex, S. E.	4,118	7,736	866	12,720	Sussex, C. H.	50	172
Warwick, S. E.	619	892	27	1,570	Warwick, C. H.	81	184
Westmoreland, E.	3,718	3,845	848	8,411	Westmoreland, C. H.	70	116
York, E.	2,129	2,598	627	5,354	Yorktown	72	175
Total	375,940	416,259	40,780	832,979			

WESTERN DISTRICT.

Allegany, M.	2,197	571	48	2,816	Covington	191	233
Augusta, North, M.	7,208	1,677	257	9,142	} Staunton	121	163
Augusta, South, M.	8,048	2,588	147	10,783			
Bath, M.	2,803	1,140	65	4,008	Bath, C. H.	170	212
Berkley, N.	8,323	1,919	276	10,528	Martinsburgh	172	71
Botetourt, S. M.	11,808	4,170	386	16,354	Fincastle	196	235
Brooke, N. W.	6,774	227	39	7,040	Wellsburgh	373	280
Cabell, W.	5,267	561	56	5,884	Cabell, C. H.	344	393
Frederick, East, N.	8,104	5,342	653	14,099	} Winchester	150	71
Frederick, West, N.	9,260	2,088	598	11,946			
Giles, W.	4,779	470	49	5,298	Giles, C. H.	240	297
Grayson, S.	7,161	462	52	7,675	Grayson, C. H.	276	354
Greenbrier, W. M.	7,791	1,159	65	9,015	Lewisburgh	221	263
Harrison, East, N. W.	9,443	626	50	10,119	} Clarksburgh	260	226
Harrison, West, N. W.	4,404	145	10	4,558			
Hampshire, N.	9,796	1,330	153	11,279	Romney	195	116
Hardy, N.	5,408	1,167	223	6,798	Moorfields	195	128
Jefferson, N.	8,438	3,999	493	12,927	Charleston	182	60
Kenhawa, W.	7,468	1,718	75	9,261	Kenhawa, C. H.	308	356
Lee, S. W.	5,830	612	19	6,461	Jonesville	392	468

* From Richmond.

† From Washington.

Counties.	Whites.	Slaves.	Free Blacks.	Total Population, 1830.	County Towns.	Distance.	
						R.*	W.†
Lewis, w. m.	6,066	162	13	6,241	Weston	249	249
Logan, w.	3,511	163	6	3,680	Logan, C. H.	324	383
Monongalia, East, n.	6,352	233	103	6,688	} Morgantown	293	215
Monongalia, West, n.	7,223	129	16	7,368			
Mason, w.	5,776	713	45	6,534	Point Pleasant	371	352
Monroe, w. m.	7,033	682	83	7,798	Union	208	267
Montgomery, s. w.	10,212	2,037	55	12,304	Christiansburgh	206	282
Morgan, n.	2,517	153	22	2,692	Berkley Springs	186	93
Nicholas, w. m.	3,229	119	1	3,349	Nicholas, C. H.	268	310
Ohio, n. w.	15,033	362	195	15,590	Wheeling	357	264
Pendleton, n. m.	5,750	498	23	6,271	Franklin	171	171
Pocahontas, w. m.	2,297	227	17	2,541	Huntersville	191	233
Preston, n.	4,947	125	27	5,099	Kingwood	261	183
Randolph, n. m.	4,426	259	115	5,000	Beverly	210	221
Rockbridge, m.	10,465	3,398	381	14,244	Lexington	156	198
Rockingham, m.	17,814	2,331	548	20,693	Harrisonburgh	122	144
Russell, s. w.	6,002	679	36	6,717	Lebanon	330	394
Scott, s. w.	5,349	338	15	5,702	Estillville	368	444
Shenandoah, East	7,171	992	164	8,327	} Woodstock	156	100
Shenandoah, West, n. m.	9,698	1,431	294	11,423			
Tazewell, s. w.	4,912	820	18	4,104	Tazewell, C. H.	290	352
Tyler, n. w.	3,991	108	5	5,750	Middlebourne	307	273
Washington, s. w.	12,785	2,568	261	15,614	Abington	309	385
Wood, w.	5,487	873	49	6,409	Parkersburgh	299	299
Wythe, s. w.	9,952	2,094	117	12,163	Wythe	253	329
Total	318,505	53,465	6,323	378,293			
Total of Virginia	694,445	469,724	47,103	1,211,272			

Richmond, the seat of government, has a beautiful and picturesque situation, at the head of the tide and at the falls of James River, and is the largest town in the state; it is favourably situated for trade and manufactures, and has an extensive commerce. Norfolk, on Elizabeth River, 8 miles above its entrance into Hampton Road, has a good harbour, and is the most commercial town in Virginia. The site is low, and in some places marshy, and the houses are not remarkable for elegance. At Gosport, near Norfolk, there is a United States navy-yard. Petersburg, on the Appomatox, at the head of the tide, is the third commercial town, and has considerable trade in flour, tobacco, and cotton. Lynchburg, on James River, where it passes through a mountain ridge, 118 miles west of Richmond, is a flourishing town, and has an extensive trade and considerable manufactures: flour, tobacco, hemp, and other produce, are transported down the river from this town to Richmond. Fredericksburg, on the Rappahannock, near the head of navigation, has considerable commerce; and Winchester, to the west of the Shenandoah, is a handsome and flourishing inland town. Williamsburg, a town now decayed, is famous for having formerly been the capital of Virginia; Yorktown, for the surrender of the British army under Cornwallis; Charlottesville, as the seat of the University of Virginia; Lexington, as the seat of Washington College; Harper's Ferry, for the passage of the Potomac through the Blue Ridge, and for a United States armoury; and the

* From Richmond.

flourishing town of Wheeling, for its situation at the point where the Cumberland Road reaches the Ohio. Mount Vernon, a pleasant eminence on the Potomac, nine miles below Alexandria, is famous for having been the residence of Washington; and Monticello, near Charlottesville, for having been the seat of Jefferson.

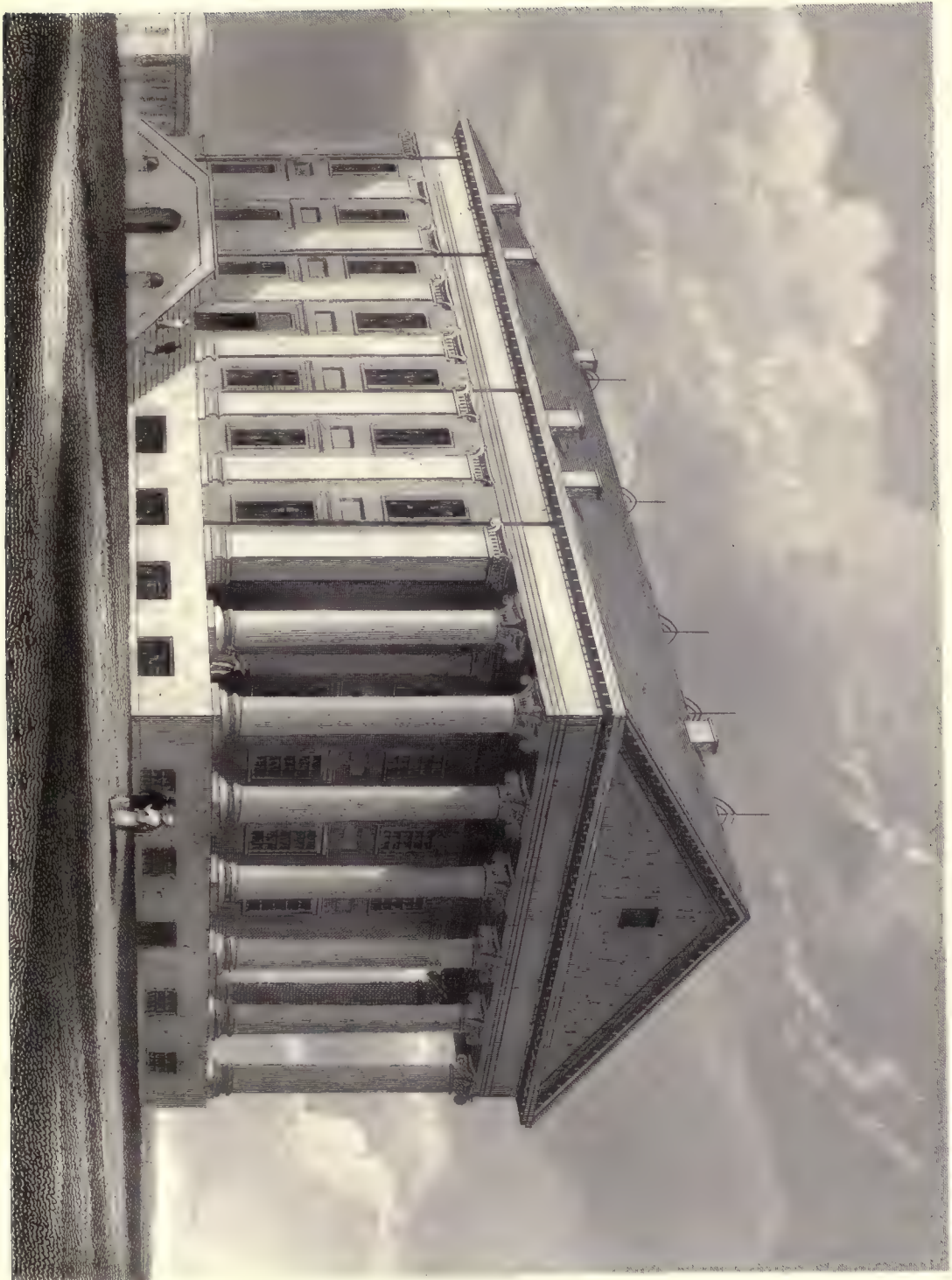
KENTUCKY.

This rising state is the most central in the union, as at present organized. It is bounded on the north-east by the state of Ohio; on the east by Virginia; on the south by Tennessee; and on the northwest by Illinois and Indiana. It extends from longitude 81° 50' to 89° 29'; and from latitude 36° 30' to 39° 10': its extreme length is 380 miles; mean width 99; and area 37,680 miles.

The eastern counties, bordering on Virginia, are mountainous and broken. A tract from five to twenty miles wide along the banks of the Ohio, is also hilly and broken, interspersed with fertile valleys. Between this strip, Green River, and the eastern counties, lies what has been called the garden of the state; it is the most populous part, and is about 150 miles long, and from fifty to 100 wide. The soil is excellent, and the surface is agreeably diversified. The lands produce much timber, with an abundance of grape-vines. There is a tract of country in the southwestern part of the state, east and north of Cumberland River, and watered by Green and Barren rivers, about 100

† From Washington.







miles in extent, called the Barrens, which a few years since was a prairie destitute of timber. It is now covered with a young growth of various kinds of trees. The soil is of an excellent quality, being a mixture of clay, loam, and sand. Through this country there runs a chain of conical hills, called knobs. Ancient fortifications and mounds of earth are found in almost all parts of Kentucky. It is also distinguished for some stupendous caves. One, called Mammoth Cave, 130 miles from Lexington, on the road leading to Nashville, is said to be eight or ten miles in length, with a great number of avenues and windings. Earth strongly impregnated with nitre is found in most of these caves, and there are many establishments for manufacturing it. From 100 pounds of earth, fifty pounds of nitre have frequently been obtained. A number of the rivers in this state have excavated the earth so as to form abrupt precipices, deep glens, and frightful gulfs. The precipices formed by Kentucky River are in many places awful, presenting perpendicular banks of 300 feet of solid limestone, surmounted with a steep and difficult ascent four times as high. The banks of Cumberland River are less precipitous, but equally depressed below the surface of the surrounding country.

In the southwestern counties near and on the Tennessee, Cumberland, and the Mississippi rivers, cotton is a staple; whilst all the grains, fruits, and meadow grasses, of the northern and middle states, flourish in the other sections. Wheat, tobacco, and hemp, are staple productions; but Indian corn is the principal grain raised for home consumption. Rye, oats, barley, buckwheat, flax, potatoes, &c., are cultivated; apples, pears, peaches, cherries, and plums, are the most common fruits. The domestic animals are large and beautiful, particularly the horse. Swine, horned cattle, horses, and mules, are annually driven to the neighbouring states for a market, and pork, bacon, and lard, are exported. The fattening of animals is the chief mode of consuming the surplus grain, on account of the expense of conveying it to market. Considerable quantities of whiskey are made. Marble of excellent quality abounds, and the whole state may be said to repose on a bed of limestone. Salt and iron are among its minerals. The most extensive works for the manufacture of salt established west of the Allegany mountains, are on the waters of Kentucky; and they supply not only this state, but a great part of Ohio and Tennessee. Kentucky,

from its position and fairs, has also become a manufacturing state.

Louisville and Portland Canal is about two miles in length, fifty feet wide at the bottom, with a lockage of twenty-two and a half feet. It was not completed in 1831. It passes from the Ohio at Louisville, to a point of the same line below the rapids near Portland-street. The banks are to be elevated two feet above the highest water-mark known at Louisville, which makes forty-two feet from the bottom of the canal. Underneath there is a solid bed of stone for a foundation the whole length of the canal, and this is to be cut perpendicularly to the requisite depth, varying from one to ten feet; the slope above which, to the top of each bank, is to be faced with stone.

The principal literary institution is Transylvania University, at Lexington. It was incorporated before the separation of Kentucky from Virginia. In 1818, it was re-organized under a board of thirteen trustees who are chosen biennially by the legislature. In 1826, its officers were, a president, nine professors, including six medical professors, five tutors, and a principal of the preparatory department; the library is large and valuable, and a considerable sum has been recently expended in the purchase of a chemical and philosophical apparatus. The number of students, including medical students, and those in the preparatory department, in 1825, was 403, of whom 272 were medical. There are also three colleges in different parts of this state, supported by different religious societies; viz. St. Joseph's, at Bardstown, by the Roman Catholics; Centre College, at Dainville, by the Presbyterians; and Augusta College, in Bracken county, by the Methodists. Little has yet been done for public schools in this state. A school fund has, however, been established, which, if managed with prudence and integrity, may yet subserve the great purpose of general education. Efforts have been made within the last two or three years to introduce a system of common schools into this state.

The Baptists in this state have 25 associations, 442 churches, 289 ministers, and 37,520 communicants; the Methodists, 77 preachers, and 23,935 members; the Presbyterians, 103 churches, 61 ministers, 6 licentiates, and 7,832 communicants; the Roman Catholics, about 30 priests; the Episcopalians, 5 ministers; the Cumberland Presbyterians are also numerous.

TOPOGRAPHY OF THE UNITED STATES. POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population.	Towns.	Population.	Distance. F.* | W.†	
Adair, s. m.	8,220	Columbia	422	91	622
Allen, s.	6,486	Scottsville	180	151	686
Anderson, m.	4,542	Lawrenceburgh	320	12	563
Barren, s. w. m.	14,821	Glasgow	617	126	661
Bath, e. m.	8,799	{ Owingsville	241	73	486
Boone, n.	9,012	{ Sharpsburgh	158	62	497
Bourbon, n. e. m.	18,434	Burlington	276	72	513
Bracken, n.	6,392	{ Paris	1,219	43	516
Breckenridge, w. m.	7,345	{ Millersburgh	470	50	515
Butler, s. w. m.	3,055	{ Middletown	195	53	505
Bullitt, n. w. m.	5,560	Augusta	691	73	489
Caldwell, w.	8,332	{ Hardinsburgh	316	118	656
Callaway, s. w.	5,159	{ Cloverport	194	129	667
Campbell, n.	9,893	{ Stephenport	64	116	554
Casey, m.	4,342	Morgantown	76	141	692
Christian, s. w.	12,694	{ Shepherds ville	278	74	612
Clarke, m.	13,052	{ Mt. Washington	226	56	600
Clay, s. e.	3,549	{ Princeton	366	229	766
Cumberland, s.	8,636	{ Eddyville	167	241	778
Daviess, w. m.	5,218	Wadesborough	163	262	801
Edmondson, s. w. m.	2,642	{ Newport	717	79	498
Estill, e. m.	4,618	{ Covington	743	79	498
Fayette, m.	25,174	Liberty	118	66	597
Fleming, n. e.	13,493	Hopkinsville	1,263	206	745
Floyd, e.	4,266	Winchester	620	45	516
Franklin, m.	9,251	Manchester	159	115	558
Gallatin, n.	6,680	Burkesville	340	119	628
Garrard, m.	11,870	Owensborough	229	150	688
Grant, n. m.	2,987	Brownsville	125	138	678
Graves, s. w.	2,503	Irvine	91	71	531
Grayson, w. m.	3,876	{ Lexington	6,104	25	534
Greene, m.	13,718	{ Athens	134	35	544
Greenup, n. e.	5,853	Flemingsburgh	642	79	493
Hancock, w. m.	1,494	Prestonsburgh	81	142	445
Hardin, w. m.	13,148	{ FRANKFORT	1,680		538
Harlan, s. e.	2,928	{ South Frankfort	307		
Harrison, n. m.	13,180	Port William	324	57	565
Hart, s. w. m.	5,292	Lancaster	570	52	559
Henderson, w.	6,649	Williamstown	197	44	520
Henry, n. m.	11,395	Mayfield	44	284	823
Hickman, s. w.	5,193	Litchfield	166	110	661
Hopkins, w.	9,763	{ Greensburgh	665	90	625
Jefferson, n. w. m.	24,002	{ Campbellsville	126	78	613
Jessamine, m.	9,961	Greenupsburgh	204	132	428
Knox, s. e.	4,321	Hawsville		130	668
Laurel, s. e. m.	2,182	Elizabethtown	601	80	631
Lawrence, e.	3,897	Harlan, C. H.		168	490
Lewis, n. e.	5,206	{ Cynthia	977	38	134
Lincoln, m.	11,012	{ Leesburgh	138	28	235
Livingston, w.	6,607	{ Clayville	48	50	955
		{ Munfordsville	193	105	656
		{ Woodsonville	48		
		Hendersonville	483	180	718
		New Castle	539	37	556
		{ Clinton	81	308	847
		{ Columbus	186		
		Madisonville	112	300	738
		{ Louisville	10,352	52	590
		{ Shippingport	607	54	592
		{ Portland	398		
		{ Williamsville	70		
		{ Nicholasville	409	37	546
		{ North Liberty	62		
		Barboursville	139	122	533
		{ Hazle Patch		102	558
		{ London	15		
		Louisa	87	127	435
		{ Clarksburgh	62	96	446
		{ Vanceburgh	93	99	443
		{ Concord	34		
		Stanford	363	51	567
		{ Crab Orchard	234	61	577
		{ Salem	254	245	783
		{ Smithland	388	260	798

* From Frankfort.

† From Washington.

Counties.	Population.	Towns.	Population.	Distance.	
				F.*	W.†
Logan, s.	13,002	Russellville	1,358	171	711
M'Cracken, w.	1,298	{ Wilmington	12	282	827
Madison, m.	18,035	{ Paducah	105	279	817
Mason, n.	16,203	{ Richmond	947	50	537
Meade, w. m.	4,111	{ Washington	868	63	483
		{ Maysville	2,040	67	478
		Brandenburg	331	90	628
		{ Harrodsburgh	1,051	30	565
Mercer, m.	17,706	{ Danville	849	40	571
		{ Perryville	283	40	575
		{ Salvisa	78	21	572
Monroe, s.	5,125	Tompkinsville	220	144	653
Montgomery, m.	10,221	{ Mount Sterling	561	00	501
Morgan, e. m.	2,857	{ Jeffersonville	33		
Muhlenberg, s. w. m.	5,341	West Liberty	50	107	434
		Greenville	217	177	715
		{ Bardstown	1,625	55	606
Nelson, w. m.	14,916	{ Bloomfield	301	44	595
		{ Fairfield	88	48	599
Nicholas, n. e. m.	8,832	Carlisle	430	58	510
Ohio, w. m.	4,913	Hartford	242	154	622
		{ Westport	314	44	577
		{ Bedford	104	53	574
Oldham, n. m.	9,563	{ Brownsville	57	41	574
		{ La Grange	27	35	568
		{ Owenton	143	28	536
Owen, n. m.	5,792	{ New Liberty	161	36	544
Pendleton, n.	3,866	Falmouth	207	60	502
Perry, s. e.	3,331	Perry, C. H.		148	550
Pike, e.	2,677	Pikeville	49	165	422
Pulaski, s. m.	9,522	Somerset	231	85	601
Rockcastle, s. e. m.	2,875	Mount Vernon	142	73	583
Russell, s. m.	3,883	{ Jamestown	67	109	615
Scott, n. m.	14,677	{ Creelsburgh	37	110	641
		Georgetown	1,344	17	534
Shelby, n. m.	19,039	{ Shelbyville	1,201	21	572
		{ Simpsonville	77	29	580
		{ Christiansburgh	78	15	566
Simpson, s.	6,099	Franklin	220	165	705
Spencer, m.	6,815	Taylorsville	248	35	586
Todd, s.	8,801	{ Elkton	382	186	726
		{ Trenton	178	200	771
		{ Cadiz	168	226	765
Trigg, s. w.	5,889	{ Canton	146	235	774
Union, w.	4,435	Morganfield	292	205	743
Warren, s. w. m.	10,947	Bowling-Green	815	145	685
		{ Springfield	618	50	601
		{ Lebanon	384	59	594
Washington, m.		{ Mackville	83	44	595
		{ Fredericksburgh	58	59	610
		{ Newmarket	43	65	600
Wayne, s.	8,731	Monticello	207	140	607
Whitely, s. e.	3,807	{ Whitely, C. H.	50	130	557
		{ Williamsburgh			
Woodford, m.	12,294	{ Versailles	904	13	546
		{ Mortonsville	145	20	553
Total	688,844, of whom 165,350 are slaves.				

The above table contains all the towns and villages in Kentucky of which the population is given in the census of 1830. When two or more towns are given for the same county, the one placed first is the seat of justice.

Frankfort, the seat of government, is regularly laid out on the east side of Kentucky River, sixty miles above its confluence with the Ohio. The site of the town is a semicircular plain, from 150 to 200 feet lower than the table land in its rear. The river is here about eighty yards wide, and, after heavy rains,

frequently rises sixty feet. Steam-boats of 300 tons come up the river as far as this place when the water is high. Population in 1820, 1679. Lexington, the largest and wealthiest town in the state, is delightfully situated, twenty-five miles east-south-east of Frankfort, in a beautiful valley on Town Fork, a small stream which falls into the south branch of Elkhorn River. It is regularly laid out, and contains numerous and extensive manufacturing establishments. The growth of this town has been exceedingly rapid. In 1797, it contained only about fifty houses, and the

* From Frankfort.

† From Washington.

best farmers lived in log cabins. It is now a large and respectable town, covered with handsome buildings. The surrounding country is much admired for its scenery, and is adorned with more than fifty country-seats. Population in 1820, 5,279. Louisville, on the Ohio, immediately above the rapids, fifty miles west of Frankfort, is the second town in the state in wealth and consequence. The great command of water power afforded by the rapids of the river, and the other advantages of its situation, have given birth to several extensive manufacturing establishments. A very active commerce is carried on between this place and Natchez, New Orleans, and St. Louis. There were in 1821 upwards of twenty-five steam-boats, measuring together 6,050 tons, employed in this trade. The population of the town in 1820, was 4,012. Most of the foreign goods consumed in Kentucky are landed here or at Maysville. The other principal towns are, Maysville on the Ohio, sixty-three miles northeast of Lexington, the chief port for the northeast part of the state, containing, in 1820, 1,130 inhabitants; Russellville, situated in a very fertile country, 200 miles southwest of Lexington, and containing, in 1820, 1,712 inhabitants; Henderson, on the Ohio, seventy-five miles below Louisville, a place of some trade, and containing, in 1820, 532 inhabitants; Newport, on the Ohio, immediately above the mouth of Licking River, and opposite Cincinnati; it contains a United States arsenal, and had, in 1820, 611 inhabitants; and Paris, in Bourbon county, a flourishing town, with a population of about 1,200 persons, several rope-walks, and manufactories of cotton bagging.

Mr. Marshall has written the history of this state, in 2 vols. 8vo.

NORTH CAROLINA.

The boundaries of this state are, on the north, Virginia; on the east and southeast, the Atlantic; on the south, South Carolina; on the northwest, Tennessee. It extends from longitude $75^{\circ} 45'$ to 84° , and from latitude $33^{\circ} 50'$ to $36^{\circ} 30'$. Its extreme length from the western border of Haywood county to Cape Hatteras, in a direction but little

* We extract the following interesting particulars from the *American Almanac*:—"The first notice of gold from North Carolina, on the records of the mint of the United States, occurs in the year 1814, within which it was received to the amount of 11,000 dollars. It continued to be received during the succeeding years, until 1824, inclusive, in different quantities, but all inferior to that of 1814, and on an average not exceeding 2,500 dollars a year. In 1825, the amount received was 17,000 dollars; in 1826, 20,000 dollars; in 1827, about 21,000 dollars; in 1828, nearly 46,000 dollars; and in 1829, 128,000 dollars. This state is rich in gold mines. The gold region is far more extensive in the south than most suppose. It commences in Virginia, and extends southwest

inclined from east and west, is 420 miles; the area above 50,000 square miles, and the mean width 120 miles.

North Carolina, in its whole width, for about sixty miles from the sea, is generally a dead level, varied only by occasional openings in the forest with which it is covered. After traversing this tedious plain, we are at length relieved by the appearance of hills and mountains, from the summits of which we behold a beautiful country, stretching far to the westward. That portion of the state which lies west of the mountains is, for the most part, remarkably fertile.

No state differs more in soil than North Carolina. Those zones which diversify New Jersey, Maryland, and Virginia, are still more conspicuous in this state. The variety of the climate is fully evinced by the indigenous vegetables. The dwarf palms and the live-oak grow around the mouth of Cape-Fear River, whilst in the western counties, the forests mark a climate of much lower temperature. In the southeastern counties, and partially on the whole seaward zone, cotton is a staple production. As an advance is made westward, this is entirely superseded by grain, of almost every species cultivated in the United States, except rice. The fig-tree flourishes on Lower Cape-Fear River; and in the western and central counties, the apple is produced in abundance. The peach succeeds over the whole state, precarious as it is in every other section of the United States. The soil and productions, in the hilly country, are nearly the same as in the northern states. Wheat, rye, barley, oats, and flax, are the crops generally cultivated, and they seem to suit the nature of the soil. Throughout the whole state, Indian corn and pulse of all kinds are abundant. Cotton is raised in considerable quantities.

North Carolina abounds in iron ore; and it is the only one of the states in which gold has been found in considerable quantities. The gold mines, which have lately excited a good deal of interest, though they have not yet proved very productive, are found on the Yadkin and its branches, and extend over a district comprising about 1000 square miles.* In al-

through North Carolina, nearly in the middle of the state, as regards its length; along the northern part of South Carolina, into Georgia, and thence northwestwardly into Alabama, and ends in Tennessee. The mines in North Carolina and Georgia are now worked to a great extent; those of Virginia and South Carolina to a small extent; and those in Tennessee have not been worked at all, although it is probable that they will be soon. In this state, the counties of Burke and Rutherford contain the best gold washings, as they are called,—that is, the gold there is found in small and pure particles mixed with the sand, which lies in deposits, as if it occupied (as the miners believe) the beds of what were once streams of water. But the counties of Mecklenburgh, Rowan,

most any part of this territory, gold may be found in greater or less abundance, mixed with the soil. It exists in minute grains or particles, and is also sometimes found in lumps of one or two pounds' weight.

North Carolina is far removed from that perfection of culture, which is necessary to give it the full advantage of the natural richness of its soil and the value of its productions. One great cause of its backwardness in agricultural improvement, is the want of inland navigation and of good harbours. It has several large rivers, but their mouths are blocked up with bars of hard sand. The best of the indifferent harbours in this state are those of Wilmington, Newbern, and Edenton. Most of the produce of the upper country, consisting of tobacco, wheat, maize, &c., has hitherto been carried to Charleston, South Carolina, and to Lynchburg, and Petersburg, Virginia. Since 1815, the state has been zealously engaged in an extensive system of internal improvements, relating to the navigation of the sound, inlets, and the rivers

Roanoke, Tar, Neuse, Cape Fear, Yadkin, Catawba, &c.; the construction of canals and roads, and the draining of marshes and swamps.

Within a few years much zeal has been displayed in the establishment of academies and schools. Until 1804, there were but two academies in the state. The number at present is 60, and it is rapidly increasing; and there is a flourishing university at Chapel Hill, 28 miles west of Raleigh, called the university of North Carolina.

The Baptists in this state have 14 associations, 272 churches, 139 ministers, and 15,530 communicants; the Presbyterians have 126 churches, 57 ministers, 9 licentiates, and 5,907 communicants; the Methodists, 32 preachers, and 12,641 members; the Lutherans, 45 congregations, 16 ministers, and 1,888 communicants; the Episcopalians, 11 ministers; the United Brethren, 4 congregations and 1,727 members; and the Friends, a number of societies.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Distance. R.* | W.†
Anson, s.	12,534	14,081	Wadesborough	134 | 410
Ashe, n. w.	4,335	6,991	Jefferson	205 | 399
Beaufort, e.	9,850	10,949	Washington	122 | 302
Bertie, e. m.	10,805	12,276	Windsor	130 | 275
Bladen, s.	7,276	7,801	Elizabethtown	99 | 385
Brunswick, e.	5,480	6,523	Smithville	178 | 445
Buncombe, w.	10,542	16,259	Ashville	259 | 513
Burke, w.	13,412	17,727	Morgantown	199 | 453
Cabarras, w. m.	7,248	8,796	Concord	141 | 402
Camden, n. e.	6,347	6,721	New Lebanon	201 | 248
Carteret, e.	5,609	6,607	Beaufort	166 | 383
Caswell, n.	13,253	15,188	Caswell, C. H.	93 | 264
Chatham, m.	12,661	15,499	Pittsborough	33 | 319
Chowan, n. e.	6,464	6,688	Edenton	155 | 284
Columbus, s.	3,912	4,141	Whitesville	138 | 462
Craven, e.	13,394	14,325	Newbern	120 | 337
Cumberland, m.	14,446	14,824	Fayetteville	61 | 347

Davidson, and Cabarras, are the richest in what may be properly called gold mines,—that is, where the gold is found in ore, and not distinguishable by the eye, and which is separated by smelting, using quicksilver for the purpose of detaching the gold from the gross earthy substances. The best veins of gold are not horizontal, nor often vertical, but have a dip of forty-five degrees to the horizon. They vary in width from a few inches to several feet. They are not confined to hills at all, but are found also in the low lands. These veins are often parallel to each other at unequal distances. Their depth in most places has not been ascertained. There have been no shafts sunk lower than 120 feet. It is not five years since these mines began to be worked to any considerable extent, and yet many of them are worked upon an extensive scale, and mills for grinding the ore, propelled by water or by steam, are erected in vast numbers. One of the Messrs. Bissels, who are probably doing more at the business than any others, told me recently, that their company employs 600 hands; and he stated that the whole number of men now employed at the mines in these southern states is at least 20,000. He also estimated the weekly product of these mines to be equal in value to 100,000 dollars, or 5,000,000 dollars annually. But a small part of the gold is sent to the United States mint; by far the larger part is sent to Europe, particularly to Paris. The chief miners (I mean labourers) are foreigners,—

Germans, Swiss, Swedes, Spaniards, English, Welch, Scotch, &c. There are no less than thirteen different languages spoken at the mines in this state; and men are flocking to the mines from all parts, and find ready employment. Hundreds of land owners and renters work the mines on their grounds on a small scale, not being able to encounter the expense of much machinery. The state of morals among the miners is represented to be deplorably bad.—The village of Charlotte, in Mecklenburgh county, is in the immediate vicinity of several of the largest mines; it is growing rapidly. There are indubitable evidences that these mines were known and worked by the aboriginal inhabitants, or some other people, a long period since. Many pieces of machinery which were used for this purpose have been found. Among them are several crucibles of earthenware, and far better than those now in use. Mr. B. told me that he had tried three of them, and stated that they last twice or three times as long as even the Hessian crucibles, which are the best now made. These gold mines prove that the whole region in which they abound was once under the powerful action of fire; and the miners who have come from the mines in South America and in Europe, pronounce this region to be more abundant in gold than any other that has been found on the globe.—*American Almanac*, p. 226—228.

* From Raleigh. † From Washington.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Distance.	
				R.*	W.†
Currituck, N. E.	8,098	7,654	Currituck	211	257
Davidson, W. M.		13,421	Lexington	110	362
Duplin, S. M.	9,744	11,373	Kenansville	120	356
Edgecombe, M.	13,276	14,933	Tarborough	72	252
Franklin, N. M.	9,741	10,665	Louisburgh	30	255
Gates, N. E.	6,837	7,866	Gates, C. H.	241	254
Granville, N.	18,222	19,343	Oxford	47	259
Greene, M.	4,533	6,313	Snow Hill	84	298
Guilford, W. M.	14,511	18,735	Greensborough	85	315
Halifax, N.	17,237	17,738	Halifax	86	216
Haywood, W.	4,073	4,593	Haywood, C. H.	295	549
Hertford, N. E.	7,712	8,541	Winton	129	240
Hyde, E.	4,967	6,117	Lake Landing	207	387
Iredell, W.	13,071	15,262	Statesville	146	396
Johnston, M.	9,607	10,998	Smithfield	27	313
Jones, S. E.	5,216	5,628	Trenton	140	357
Lenoir, M.	6,799	7,635	Kingston	80	316
Lincoln, S. W.	18,147	22,625	Lincolnton	169	430
Macon, W.		5,390	Franklin	333	587
Martin, E. M.	6,320	8,544	Williamston	106	268
Mecklenburgh, S. W.	16,895	20,076	Charlotte	150	402
Montgomery, W. M.	8,693	10,918	Lawrenceville	109	382
Moore, M.	7,123	7,753	Carthage	69	355
Nash, M.	8,185	8,492	Nashville	44	273
New Hanover, S. E.	10,866	10,759	Wilmington	149	416
Northampton, N.	13,242	13,103	Northampton, C. H.	95	225
Onslow, S. E.	7,016	7,814	Onslow, C. H.	188	405
Orange, M.	23,493	23,875	Hillsborough	41	296
Pasquotank, N. E.	8,008	8,616	Elizabeth City	189	260
Perquimans, N. E.	6,857	7,417	Hertford	282	267
Person, N.	9,029	10,027	Roxborough	60	271
Pitt, E. M.	10,001	12,174	Greenville	97	277
Randolph, W. M.	11,331	12,400	Ashborough	72	345
Richmond, S.	7,537	9,326	Rockingham	113	399
Robeson, S.	8,204	9,355	Lumberton	94	380
Rockingham, M.	11,474	12,920	Wentworth	108	292
Rowan, W. M.	26,009	20,796	Salisbury	118	379
Rutherford, S. W.	15,351	17,557	Rutherfordton	223	484
Sampson, M.	8,908	11,768	Clinton	96	382
Stokes, N. W.	13,033	16,196	Salem	127	355
Surry, N. W.	12,320	14,501	Rockford	151	379
Tyrrell, E.	4,319	4,732	Columbia	170	332
Wake, M.	20,102	20,417	RALEIGH		270
Warren, N.	11,004	10,916	Warrenton	57	229
Washington, E.	3,986	4,562	Plymouth	128	290
Wayne, M.	9,040	10,902	Wanesborough	51	337
Wilkes, N. W.	9,967	11,942	Wilkesborough	175	403
Total	638,829	738,470, of whom 246,462 are slaves.			

POPULATION OF THE PRINCIPAL TOWNS IN 1830.

Newbern, 3,776	Raleigh, 1,700	Tarborough, 971
Fayetteville, 2,868	Salisbury, 1,613	Warrenton, 962
Wilmington, 1820, 2,633	Edenton, 1820, 1,561	Plymouth, 660

Raleigh, the seat of government, is pleasantly situated near the centre of the state. Newbern, the largest town, is on a flat sandy point of land, at the junction of the Neuse river with the Trent. Fayetteville is regularly laid out near the west bank of Cape Fear river, at the head of boat navigation, and is one of the most flourishing commercial towns in the state. Wilmington is on the east side of Cape Fear river, just below the confluence of the two branches, 35 miles from the sea. The harbour admits vessels of 300 tons; but the entrance is rendered dangerous and difficult by a large shoal. More produce is exported from this port than from any other

in the state. Edenton is on Albemarle Sound, near the mouth of Chowan river.

Dr. Williamson, the historian of this state, has some very judicious observations of general applicability to other southern regions of the union. The remarks on the soil and produce, and on the state of health in different parts of the country, will be read with advantage. As a medical philosopher he will rank higher than as an historian.

"The climate of North Carolina," says he, "is usually thought to be unhealthy, but this character is not applicable, except to the eastern part of the state; the part that is best known to strangers and

* From Raleigh.

† From Washington.

most frequented, because it is intersected by navigable rivers, and is the general seat of commerce. Other parts of the state are exceedingly healthy. By taking a short view of the face of the country, we shall immediately perceive the cause of this remarkable difference.

"Carolina is a perfect plain for sixty miles from the Atlantic ocean, without hills or stones. It has been covered by water, at no great distance of time. Beds of oyster shells and other marine exuviae, are found near the surface, in many parts of the flat country. Those concretions of shells are burnt for making lime. The gulf stream runs along the coast, within six or seven leagues of the shore. The soundings change suddenly at the edge of the gulf stream, for the margin is nearly a perpendicular bank. A great fissure, nearly in the direction of northeast and southwest, has been made in the bottom of the ocean, by some convulsion of nature. Such at least appears to have been the case. The ground rose to the northwestward of the chasm, and sunk to the southeastward. The sandy bottom of the sea, by this elevation to the westward, was converted into dry land. In this case, the rivers coming down from the original dry land, made a crooked path for themselves through the sandy plain. Those rivers had little descent; wherefore, in their tardy course, they deposited the vegetable mould that came down from the higher grounds. In some cases, the sandy plain had been depressed five or six feet below the level of the common surface. In those parts, it must have happened that ponds of stagnant water were formed, until the sunken ground was filled up by vegetable mould. By this hypothesis we are enabled to explain all the present phenomena of the flat country. In some parts we find large sandy tracts, perfectly level, that hardly contain any mixture of clay or vegetable soil. The growth is pine or black jack. In other parts the land is of an excellent quality, with a stiff clay bottom. Those lands are low, and in many places they require draining. The rivers are bordered by a strip of land that is lower than the common surface of the country. Those river lands are exceedingly rich, for they consist of vegetable mould, three or four feet deep, with a small mixture of sand or clay. In many places those river lands are three or four times the breadth of the river. There are other large tracts detached from the rivers, in which the soil is nearly of the same quality with that of the river lands. But it is seldom mixed with sand or

clay. In those tracts the vegetable soil is commonly five or six feet deep, and the whole of it is saturated with water. Such are the Dismals, so called, and the other great swamps that are numerous in the flat country.

"Supposing as above, that the original surface, where the swamps are found, had been covered for many years with stagnant water, because it was somewhat depressed; it would follow, that the chief rivers at every great fall of rain must have thrown part of their turbid stream into those stagnant ponds, until they were so filled with adventitious soil, as to produce reeds and other aquatic plants. The luxuriant growth in those swamps, in the progress of time, caused the surface to rise; so that in many cases it is higher than the adjacent sandy and dry plain. Some of those swamps are fifteen or twenty miles in diameter, and they are chiefly covered, at present, with a thick growth of cypress* or Juniper.† In some parts they are covered with maple,‡ poplar,§ and white oak,|| intermixed with tall reeds, magnolia,¶ and green briars.

"The soil increases every year by the addition of decayed vegetables; but the water is detained by the leaves and the roots of trees, so as to have little motion, though the surface has become much higher than the water in the adjacent rivers.

"Some years ago, Mr. Josiah Collins of Edenton, and one or two other gentlemen, projected a canal, about five miles long, through a swamp of this kind, in Tyrrel county, that was chiefly covered with stagnant water. Their original object was to drain a lake that is eight or nine miles long, and nearly of the same breadth. Upon making a survey, it appeared that the water in the lake was three feet higher than the richest part of the swamp, and the surface of that swamp was seven feet higher than the water in the nearest river. By that survey it was discovered that they were in possession of an excellent rice swamp; above ten thousand acres in one body, that may be covered at pleasure with fresh water, eighteen inches or two feet deep. By finishing the canal, and erecting three or four mills, that are turned by the waters of the lake, and by raising a few crops of rice and wheat, they have shown that lands, formerly of little value, may be made the most profitable lands in the state. The rice produced on those lands is not exceeded in quality by any rice in Georgia or South Carolina. Mr. Collins, to vary the crop, has occasionally sown part of those lands with

* *Cupressus disticha*, foliis disticis patentibus.

† *Cupressus tryoides*, foliis imbricatis frondibus ancipitibus.

‡ *Acer rubrum*.

§ *Arbor tulipifera Virginiana*.

|| *Quercus alba Virginiana*.

¶ *Magnolia glauca*, foliis oblato oblongis, subtus glauca.

wheat, and they produce thirty-four to thirty-five bushels per acre.

"In digging the canal from the lake to the river, many large trees were found in a state of good preservation, though they had been covered four or five feet deep by vegetable soil. A clear indication of the manner in which the soil has been formed.

"It is conjectured that the swamps, within forty miles of the coast, do not occupy less than a fifth part of the surface. It will readily be perceived, that so large a quantity of stagnant water among putrescent vegetables, must be unfriendly to the health of the inhabitants. Intermitting fevers are very frequent in the summer and autumn; but fevers with inflammatory symptoms, that have a putrid tendency, prevail in the winter. The progress of time and cultivation of the soil, cannot fail to make a considerable change in the climate, in the flat lands of Carolina. And the effect of that change must be favourable to the health of the inhabitants. The natural operations of time would reduce those extensive and numerous swamps, to the condition of firm and dry land; but this event must be greatly accelerated by the progress of cultivation. The subsidence of water is very observable, in many parts along our coast. Where the lands are high, this circumstance has been little observed; but in flat countries, where the water is troublesome, it claims more attention. There are considerable tracts, now planted with corn, that, in the beginning of the eighteenth century, were covered by water. This was not the effect of drains or ditches; it was caused by the waters sinking in the adjacent rivers or sounds. There are two causes that equally contribute to the failure of water in the low country;—the cultivation of the interior lands, and the regular subsidence of water in the ocean. Most of the large rivers in Carolina discharge themselves into a sound, that communicates with the Atlantic by small inlets. The water in the sound is nearly fresh; it is perfectly fresh in the rivers. These rivers have no tide, and they have little motion through the whole of the flat country. The waters are observed to swell in the rivers and in the sound by a heavy fall of rain. From this circumstance we infer, that every decrease of rain will be attended by a decrease of water in the rivers, and by a consequent decrease of water in the sound. The general decrease of rain is easily accounted for by the progress of cultivation. We account, in the same manner, for the decrease of fresh water in all our rivers. As the waters decrease or sink, the lands appear to rise, and the marshes, that communicate with the rivers, become dry land; except in cases

where a level surface and thick growth prevents the rain water from running off. The decrease of the rivers, from this cause alone, with the aid of ditching and draining, would soon reduce all the great swamps to the condition of arable land. But there is another cause that co-operates with the decrease of river water. The waters on the coast are supposed to sink. We have no solid marks on our coast, by which we can estimate the accidents of ocean water; but we allege the general subsidence of the ocean here, from what is observed in other countries. The inhabitants of West Bothnia have observed, by marks on the rocks, that the sea decreases four inches five lines every ten years, or forty-four inches and two lines every century. Dalen calculates, that the waters in Sweden sink thirty-seven inches in one hundred years. Ravenna, in Italy, is no longer a sea-port. There seems to be good evidence, that a direct communication by water formerly existed between the Baltic and the Euxine or Black Sea.

"Herodotus alleges, that great part of Poland and Russia had been covered by water. And Orpheus, in his Argonauts, supposes that one might sail from the Euxine to the Baltic. There must have been a tradition, that such a passage had formerly been effected. Ptolemy speaks of Scandinavia as an island. Homer describes the island of Pharos as a day's sail from Egypt; and we know, that the present city of Alexandria is built on the very spot that was the original harbour of the old city. This remarkable subsidence of the ocean has been accounted for by different theories; none of them, as I think, satisfactory. It is not to be supposed, that the bed of the ocean is deepened by the attrition of the water; for more earth or clay is doubtless brought into the ocean by rivers, than is taken out of it by other means.

"There may be caverns in the earth by which water is occasionally absorbed. Islands have been raised in the ocean by the help of subterranean fire. A small one has lately been added to the Azores; but the space they formerly occupied does not contain much water. When we consider the numerous and frequent volcanic eruptions that have appeared in the great chain of islands that extend through the Pacific ocean, near the equator; the numerous eruptions that have appeared in the Cordillera of the Andes; and the constant flames that appeared in Greenland and other high latitudes, giving light and heat to those frozen regions; we must suppose that the earth abounds in caverns whereby water has been absorbed. But we are also to consider that dry land has disappeared or sunk in different parts of the world; and

the absorption of water by volcanic eruptions is neither great nor regular.

"There is another process by which, as I conceive, the decrease of water may be accounted for. It is the regular and constant conversion of water into shells, madrepores, and corals. Fixable air abounds in water, by means of which it unites with calcareous bodies. Corals and other substances, formed by this union, are specifically heavier than water, nearly as two and a half to one.

"We do not pretend to know, by what process certain animals or insects in the ocean cause the formation of shells, madrepores, and corals, from water, or from earth and air that are attached to water, and seem to be part of that fluid; for they increase its bulk; but the process is constant. The shells that appear in shallow water, on our coast, are of little importance; but the madrepores and corals, formed in the ocean, are of prodigious magnitude. We are told, by late navigators, that in some parts of the South Sea navigation has become dangerous; and in other parts it is absolutely impracticable, by the formation of great ledges of madrepores or corals, where the water had been very deep. When we consider that more than two inches of water are required to form one inch of those weighty substances, we shall discover a probable cause for the subsidence of ocean water. Whatever the cause may be, it can hardly be doubted, that the ocean is retiring from the land, or decreasing in depth. Nor is it to be doubted, that the quantity of water discharged by the rivers in Carolina,* and in every new country, is decreasing every year. It must inevitably follow, from one or both of these causes, that the marshes or swamps in Carolina will soon disappear. The progress of agriculture is a steady auxiliary to the operations of nature in producing this desirable change. It is already discovered, as we have seen, that marshes are drainable; and the soil, when fitted to the plough, is excellent in quality. In process of time all those swamps will be cultivated.

"Intermitting fevers are the usual complaints in the eastern part of Carolina. Those fevers seem to arise, as we have already observed, from the exhalations of stagnant water or putrid vegetables. They prevail more or less, according to the quantity of water that is exhaled, impregnated with putrescent vegetables. All our observations tend to confirm this opinion. When stagnant water is not exhaled, intermitting fevers are less prevalent. When putrescent vegetables are exposed to the action of the sun, intermittents are frequent. In the midst of great forests, the sun never visits the surface; his rays

being fully intercepted by a thick growth of cypress, juniper, magnolia, and reeds. Intermitting fevers do not prevail in such places. Families who live in the Dismals, employed in making shingles, without a perch of clear or dry ground, enjoy more health than people who live on their new plantations, near the rivers or swamps. The bad effect of recent cultivation, by which decaying vegetables are exposed to the sun, is severely felt in flat countries and warm climates. Carolina was less sickly before the country was opened. The second colony of adventurers remained twelve months in the country, and they lost only five men out of one hundred and seven, though they were badly sheltered, and suffered much by the scarcity of provisions. A gentleman in Craven county lived on his farm above forty years, without suffering by intermitting fevers, though his family consisted of fifty or sixty persons. There were about one hundred acres of clear ground in front of his house that had been cultivated many years: but there was a thick wood behind the house. In the beginning of the year 1785, he caused all the timber and shrubs that were behind his house, within four or five hundred yards, to be cut down. His object was pasture, and a free circulation of air. One third of his family, on the next summer, was taken down by intermitting fevers. Such complaints were not more prevalent than usual, during that summer, in other parts of the flat country. Those fevers were certainly caused by exposing to the sun a large surface of fresh land, covered with putrescent vegetables. Similar effects are very common in the West Indies, where they are fatal to such a degree, that soil, newly turned up, is supposed by the planters to contain some pestilential quality. Putrid exhalations are the general cause of those bilious intermittents; but in tropical climates, where the sun is vertical, and the tendency to putrefaction great, and where the influence of heat on the living body increases the malignancy of the complaint, those fevers become most fatal. The simple intermitting fever that prevails during the summer season, in Carolina, is seldom fatal to the natives, except in cases where the frequent recurrence of such fevers may occasion an indurated spleen and other visceral obstructions. The consequence of such obstructions is a dropsy or other cachectical complaint, of which the patient dies. Fevers of the warm season sometimes become dangerous, especially to strangers, by the imprudent conduct of the patient. Upon the approach of febrile symptoms, strangers are apt, as they express themselves, to brave the fever. In this case, by taking exercise, increasing the muscular motion, and not unfrequently by the use of ardent spirits or

other stimulating drinks, they bring on a typhus or other constant fever instead of a simple intermittent. A warm season, followed by a considerable drought, often produces an endemical flux or dysentery. Those complaints are doubtless of the putrid kind, and should be treated accordingly.

"People on the low grounds of Carolina, are frequently attacked by fevers in the winter, which are called inflammatory; for they are attended by pain in some part of the head or the breast. These fevers, in many cases, prove fatal in three or four days. By the general symptoms, compared with the circumstances and places in which those fevers prevail, they seem to be of the putrid kind. They prevail in districts that are subject to intermitting fevers; whence they may be presumed to arise, in some measure, from the same cause; but they prevail in a different season of the year; whence it may be inferred, that there is a combination of causes in one fever that does not occur in the other. It has already been observed, that intermitting fevers are more or less frequent in the lowlands of Carolina, according to the quantity of putrescent vegetable substance that is exposed to the action of the sun. From this circumstance it is conjectured, that the most simple species of intermitting fevers are, in some measure, the effect of putrefaction; but the most dangerous putrid fevers arise from the same cause. The difference then between the appearance or the effects of those fevers must depend on the state of the solids or the fluids of the person affected, or upon the acrimony or virulence which the putrescent matter may have acquired before it is absorbed. The appearance of those fevers in the summer, when putrescent matter is plentifully diluted by rain, seems to be determined, in some measure, by the constitutions of the several patients. Strangers, from a northern climate, who have a vigorous constitution, whose muscular system is well braced, instead of having a moderate fever, in the summer or autumn, that will duly intermit after the first or second day, in many cases have an ardent fever with full pulse. Instead of intermitting, it puts on the appearance of a typhus, or a nervous fever, in a few days, and terminates fatally. The same cause should produce the same effect upon similar bodies; but the effects upon the native and stranger are not alike; hence we infer, that a tense

fibre or vigorous constitution, which naturally excites more heat, or causes the fever to be more ardent, produces, at the same time, a different and dangerous type. According to this theory, we observe, that by taking violent exercise, when the symptoms of an intermitting fever are coming on, the fever becomes ardent, and in many cases it is attended with danger. From these facts it would appear, that the affecting cause remaining the same, the fever is more or less dangerous according to the constitution of the patient, or any other circumstance that tends more or less to brace the system, or produce symptoms of inflammation.*

"Though the fevers that appear in winter are not usually called intermittents, they are not less effected by putrescent vegetable matter than the autumnal fevers. Those winter fevers have been deemed inflammatory, because they are usually attended by a pain in the head, or by a pain in the breast, that resembles pleurisy. They prevail, not only in the same districts in which intermittents are common, but they are most likely to attack people who on the preceding autumn had suffered by intermitting fevers. These circumstances make it probable, but there are other circumstances from which it is certain, that the fevers to which I refer arise from a septic cause. In different years they prevail in different neighbourhoods, affecting one or more persons in every family. When this disease is most prevalent, it may generally be traced to the vicinity of a marsh, or the bed of a river, where mud or other putrescent vegetable substance has been exposed to the sun, in dry weather. The effects of dry weather on similar grounds, in the summer season, is frequently a flux or dysentery, which are also of the putrid kind. If the same cause, that would produce a simple intermittent, may also be found to produce an ardent fever, tending to putrefaction, by the sole concurrence of muscular motion, or the direct operation of the sun, whereby heat is excited, we are to presume that winter colds would produce remarkable effects on the appearance of that fever. The common effect of cold is to brace the solids and check the perspiration. In the case before us, the perspiration being obstructed, the offending matter, that has been absorbed, is retained in the system, and gives a septic disposition to the fluids, by the increased action of the muscles.† It is generally

* A young man, near Pasquotank, heated himself by dancing, after he had been affected some hours by a slight pain in the brow. This happened in the winter season, during the prevalence of a complaint, that is called, however improperly, "a pleurisy in the head." He died within two days. This disease having obtained the name of an inflammatory fever, is usually treated like such complaints, by copious blood-letting. Though the patients, most

of them, die, the lancet continues to be used with too much freedom; because it seems to give temporary relief, and it can be used by men who have never taken the trouble to learn the nature of the disease, nor its proper remedy.

† It has been alleged, that the endemic fevers of summer and winter are equally caused by the absorption of putrid matter into the system. In support of this opinion we observe, that being

observed, that men suffer more than women or children by this disease. In the months of December and January, 1794—5, eight or nine men, the heads of families, who lived near the river Neuse, were taken off by a fever such as I have mentioned; but no other people in that vicinity suffered by the disease. Some cause must have existed for this remarkable difference. The complaints of those men were not produced by intemperance alone; for though ardent spirits injure the system not only by destroying the powers of the solids, but also by vitiating the fluids, whence they bring on death in various forms, some of the men who fell under that bilious pleurisy, were not intemperate. In this case, the disease seems to have arisen from obstructed perspiration. It can not escape notice that men in Carolina are chiefly exposed to complaints which arise from that source. The temperature of the weather, in the eastern part of the state, is very changeable. When the wind is at north-west, there is occasional hard frost; but the weather at other times is moderate and soft. As there are not many cold days, nor many days in which flannels or thick woollen garments are necessary, people fit their dress for the temperate weather, and not for the few days of incidental cold. They do not consider that warm clothes may be worn, in temperate weather, without danger; but thin clothes, in cold weather, expose the wearer to mortal disease. Women and children are not only more temperate than men, but they are usually at home; and they can increase their clothes upon a sudden approach of cold, or they can sit by the fire. Men are frequently surprised by rain or sudden cold, when they are abroad, and are not provided with a suitable dress. Prudence is the child of experience, but heedless men are seldom taught by the experience of other people. Personal experience, in this as in many other cases, frequently comes too late. When the planters, they especially who have been visited by intermitting fevers during the summer or autumn, and those who live in the flat country, shall have the prudence to keep themselves dry, and shall be provided, in all their excursions, during the winter, with clothing fitted to cold

exposed to a heavy shower in summer or autumn, in warm climates, is usually followed by intermitting fevers; but people at sea, in the same latitude and season of the year, expose themselves to showers without danger, because the atmosphere, at sea, is not charged with putrescent exhalations. It may also be observed, that people who use unguents, in warm climates, are less endangered by those fevers. Black people, and white people, who have a copious perspiration, are also less subject to those complaints. Cold evenings in the autumn, and rain, by shutting the pores of the skin, are known to be the cause of innumerable fevers. While the perspiration is free, the putrid matter, that may be taken in by the absorbing vessels, is immediately discharged from the system; but in the case of obstructed perspiration, it is retained among the

weather;* when they shall exchange the use of grog and ardent spirits for beer well seasoned with hops, or water, that is less dangerous than either, we may be assured that many useful lives will be saved to the community.

“When the country shall be sufficiently cleared, and the lands perfectly drained, there is much reason to believe, that people near the sea-coast will enjoy a desirable state of health through the latter part of the summer, which is now called the sickly season. The weather will also be less variable during the winter season, for reasons that have been stated; and a free circulation of air will diminish the summer's heat.

“There are not many countries, in which the state of health differs so much as it does at present in the different parts of North Carolina. At the distance of sixty or seventy miles from the coast, the land begins to rise into small hills, stones appear on the surface, and the streams ripple in their course. As we advance a little farther to the westward, we find all the variety of hills and dales that may consist with a fertile country, fit for cultivation. In that happy climate, where the soil is good, and the water pure; where the inhabitants enjoy the desirable effects of winter, without suffering by the rigorous severity of cold; there are few of the diseases which are most painful and destructive in cold climates: neither are the inhabitants wasted by the more fatal diseases of warm climates. There are not many parts in the United States, perhaps there is not any part of the world, in which families increase faster than in the western part of Carolina. When we consider, that the inhabitants are seldom affected by coughs, consumptions, or inflammatory complaints, for the winters are temperate; that intermitting, bilious, or putrid fevers, are seldom found among them; we naturally infer, that the climate must be healthy. It is not denied, that people, in many other climates or countries, are equally healthy with those in the western part of Carolina; but the winters in other regions, that are deemed healthy, are more severe, or the land is less fertile, or it is not so cheap, or the means of supporting a family, from one cause and

circulating fluids, and becomes the seed of mortal disease. In cold weather, the complaint is usually thrown upon the head or breast.

* Such is the commendable industry of women in Carolina, that two thirds of the inhabitants are clothed in cotton that is raised, spun, and woven by themselves. This is an excellent dress for warm or temperate weather; but a garment of soft wool, to be worn next the skin, is greatly to be preferred by valetudinarians. It is found that sheep thrive very well in Carolina, and their wool is good in quality. Planters, such of them especially as are invalids, and they who live in sickly districts, should never go abroad in the winter season, without a flannel waistcoat under the shirt, and a substantia. greatcoat to be worn in case of a sudden change of weather.

another, are more difficult than in Carolina; whence it follows, that early marriages are not so frequent, and the increase of families is not so great. We have not the means of comparing the increase of people in Carolina with that in foreign countries, but it has been compared with the increase in other states. It appears by the census taken in the year 1791, that the number of inhabitants above sixteen years old, exceeded the number under sixteen in all the northern and middle states, including Maryland. In the southern states there was a difference in favour of those under sixteen, and this difference was greater in North Carolina than in any other state, except Kentucky. This difference might be explained by supposing that the duration of human life is shorter in the southern states, and that sixteen years is nearer the middle of the general extent; but this solution can not be admitted, because in the most healthy parts of the southern states, the difference was greatest in favour of the class under sixteen. The greater proportion of people below sixteen must be the combined effect of early marriage and a good climate. Families are easily supported where the lands are good, and the winters mild. In this case, people marry young, and have many children; but early marriage alone will not produce a great proportion of children when compared to that of grown persons, because sickly climates are not less fatal to infants than to those who are more advanced in years. This distinction is fully supported by the census in North Carolina. The number of males in the whole state, below sixteen, was to that above sixteen, nearly as eleven to ten; but this difference can not be the effect of early marriage alone, or the facility of maintaining a family; it depends very much on the salubrity of the climate. People live in the district of Edenton with more ease than in the district of Salisbury; for their cattle require less feeding in winter,* and they have a plentiful supply of fish; but the proportion of persons under sixteen, was to that above sixteen, in Salisbury district, compared to that in Edenton district, nearly as three to one. In Salisbury district there were fifteen thousand eight hundred and twenty-six males under sixteen, and thirteen thousand nine hundred and eight above sixteen. The difference is nearly equal to a seventh part of the whole number of the older class. In Edenton district, the number of males under sixteen, was eight thousand six hundred and ninety-six, and the number above sixteen, was eight thousand three hundred and ninety-four. The difference being less than a twenty-seventh part of the

* The flat lands near the coast, except such of them as are composed of sand, are generally covered by a thick growth of canes.

number of the older class. This remarkable excess, in favour of Salisbury district, can only be explained by the greater salubrity of the climate. There are some very old people in the western parts of Carolina, but they were not born in that country; they are older than the settlement. After the country shall have been planted two or three centuries, and the natives shall have attained the length of years that corresponds with the climate, a greater proportion of the inhabitants above sixteen years will doubtless be found."

TENNESSEE

Is bounded on the north by Kentucky and Virginia, on the south east by North Carolina, on the south by Georgia, Alabama, and Mississippi, and on the west by Arkansas territory. Its length is 420 miles, extending from longitude $81^{\circ} 28'$ to $91^{\circ} 37'$; its breadth 102 miles, from latitude 35° to $36^{\circ} 30'$; comprising an area of 43,000 square miles.

Tennessee is marked by bold features. It is washed by the great river Mississippi on the west, and the fine rivers Tennessee and Cumberland pass through it in very serpentine courses. The western part is undulating; some of it level; in the middle it is hilly; and the eastern part, known by the name of East Tennessee, abounds in mountains, many of them lofty, and presenting scenery grand and picturesque. Of these mountains, the Cumberland, or Great Laurel Ridge, is the most remarkable. Stone, Yellow, Iron-Bald, Smoky, and Unaka mountains, join each other, and form, in a direction nearly north east and south west, the eastern boundary of the state. North west of these, and separated from each other by valleys of from 5 to 15 miles wide, are Bay's mountain, Copper Ridge, Clinch mountain, Powell's mountain, and Welling's Ridge. The last four terminate north of Tennessee river. They are all encircled by valleys, which open passages for rivers and roads, and give occasion to many beautiful views. Caves of great depth and extent are found throughout the state.

The climate is generally healthy. In East Tennessee it is so tempered by the mountain air on one side, and by refreshing breezes from the gulf of Mexico on the other, that this part of the state has one of the most desirable climates in North America. The middle part resembles Kentucky. The winter in Tennessee resembles the spring in New England. Snow seldom falls to a greater depth than ten inches,

The leaves of this plant are green all winter. They are long and succulent, and cattle in general are greatly attached to them.

or lies longer than ten days. Cumberland river has been frozen over but three times since the country was settled. Cattle are rarely sheltered. In the western parts there are some low bottoms, on which the inhabitants are subject to bilious fevers, and fever and ague in the autumn.

A considerable portion of the state is bedded on limestone. A large deposit of gypsum has been discovered. Copperas, alum, nitre, and lead, are among the minerals. Some silver has been found. Coal is supposed to be plentiful. Saltpetre is so abundant as to form a great article of commerce. There are several mineral springs, and many valuable salt springs. The western part of the state has a black, rich soil; in the middle are great quantities of excellent land; in the eastern, the mountains are lean, but there are many fertile valleys. There is a great profusion of natural timber, and in many places are great quantities of cane remarkably thick and strong. The state also abounds with medicinal plants. But the great business of the state is agricultural. The soil produces abundantly cotton and tobacco, which are the staple commodities. The inhabitants also raise a plentiful supply of grain, grass, and fruit. They export cotton, tobacco, and flour; also saltpetre, and many other articles. The principal commerce is carried on through the Tennessee and Cumberland rivers, and from them by the Ohio and Mississippi to New Orleans. This state also supplies Kentucky Ohio, &c. with cotton for inland manufactures; and

from East Tennessee considerable numbers of cattle are sent to the seaports on the Atlantic. It is probable that a new avenue to commerce will soon be opened, by means of roads or a canal between the Tennessee River and the navigable waters of the Tombeekbee. The Chickasaws possess all the western parts of this state, between the Mississippi and Tennessee. The Cherokees own a large tract near the south east part, on the Hiwassee.

There are nominally four colleges in this state; one at Greenville; one at Knoxville; one at Nashville, and one in Washington county. Greenville College is a flourishing institution. It has a philosophical apparatus, a library of between one and two thousand volumes, and between seventy and eighty students. The college at Knoxville was founded several years since, but has not yet come into operation. It is entitled to the benefit of a donation from congress, which it is expected will yield a capital of 50,000 dollars.

The Baptists in this state have 11 associations, 214 churches, 141 ministers, and 11,971 communicants; the Methodists, 125 preachers, and 38,242 members, including a few belonging to adjacent states; the Presbyterians, 105 churches, 60 ministers, 20 licentiates, and 6,214 communicants; the Lutherans, 10 ministers. The Cumberland Presbyterians, computed at about 100,000, reside chiefly in Tennessee and Kentucky.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

WEST TENNESSEE.					
Counties.	Population, 1820.	Population, 1830.	County Towns.	Distance. N. * | W. †	
Bedford, M.	16,012	30,444	Shelbyville	52	692
Carroll, W.		9,378	Huntingdon	109	823
Davidson, M.	20,154	22,523	NASHVILLE		
Nashville, town		5,566			714
Dickson, W. M.	5,190	7,261	Charlotte	40	754
Dyer, W.		1,904	Dyersburgh	168	882
Fayette, S. W.		8,654	Somerville	194	873
Fentress, N.		2,760	Jamestown	131	600
Franklin, S.	16,571	15,644	Winchester	82	684
Gibson, W.		5,801	Trenton	139	853
Giles, S.	12,558	18,920	Pulaski	77	739
Hardiman, S. W.		11,628	Bolivar	158	849
Hardin, S. W.	1,462	4,567	Savannah	112	803
Haywood, W.		5,356	Brownsville	275	891
Henderson, W. M.		8,741	Lexington	130	840
Henry, N. W.		12,230	Paris	108	810
Hickman, M.	6,080	8,132	Vernon	66	766
Humphreys, W. M.	4,067	6,189	Reynoldsburgh	77	792
Jackson, N.	7,593	9,902	Gainesborough	79	652
Lawrence, S.	3,271	5,412	Lawrenceburgh	75	756
Lincoln, S.	14,761	22,086	Fayetteville	73	722
Madison, W.		11,750	Jackson	147	861
Maury, M.	22,141	28,153	Columbia	42	733
M'Nairy, S.		5,697	Purdy	128	819

* From Nashville.

† From Washington.

Counties.	Population, 1820.	Population, 1830.	County Towns.	Distance.	
				N.*	W.†
Montgomery, N.	12,219	14,365	Clarksville	46	746
Obion, N. W.		2,099	Troy	161	863
Overton, N.	7,188	8,246	Monroe	109	622
Perry, W. M.	2,384	7,038	Shannonsville	114	805
Robertson, N.	7,270	13,302	Springfield	25	727
Rutherford, M.	19,552	26,133	Murfreesborough	33	686
Shelby, S. W.	344	5,652	Memphis	224	915
Smith, N.	17,580	21,492	Carthage	52	670
Sumner, N.	19,211	20,606	Gallatin	25	699
Stewart, N. W.	8,397	6,988	Dover	81	787
Tipton, W.		5,317	Covington	197	894
Warren, M.	10,348	15,351	McMinnville	74	644
Wayne, S.	2,459	6,013	Waynesborough	92	783
Weakley, N. W.		4,796	Dresden	132	834
White, M.	8,701	9,967	Sparta	92	623
Williamson, M.	20,640	26,608	Franklin	18	732
Wilson, N. M.	18,730	25,477	Lebanon	31	683
Total	287,501	488,448, of whom 124,492 are slaves.			
EAST TENNESSEE.					
Anderson, M.	4,668	5,312	Clinton	195	534
Bledsoe, M.	4,005	6,448	Pikeville	109	608
Blount, E.	11,258	11,027	Marysville	197	532
Campbell, N.	4,244	5,110	Jacksonborough	215	543
Carter, N. E.	4,835	6,418	Elizabethtown	316	420
Claiborne, N.	5,508	8,470	Tazewell	243	491
Cocke, E.	4,892	6,048	Newport	247	479
Granger, E. M.	7,651	10,066	Rutledge	232	483
Greene, E.	11,221	14,410	Greenville	273	454
Hamilton, S. E. M.	821	2,274	Hamilton, C. H.	148	619
Hawkins, N. E.	10,949	13,683	Rogersville	264	451
Jefferson, E.	8,953	11,799	Dandridge	229	497
Knox, E. M.	13,034	14,498	Knoxville	199	516
McMinn, S. E. M.	1,623	14,497	Athens	153	572
Marion, S.	3,888	5,516	Jasper	114	653
Monroe, S. E.	2,529	13,709	Madisonville	168	561
Morgan, N.	1,676	2,582	Montgomery	46	746
Rhea, E. M.	4,215	8,182	Washington	129	593
Roane, E. M.	7,895	11,340	Kingston	159	556
Sevier, E.	4,772	5,117	Sevier, C. H.	225	515
Sullivan, N. E.	7,015	10,073	Blountsville	306	409
Washington, E.	9,557	10,995	Jonesborough	298	429
Total	135,312	196,374, of whom 17,890 are slaves.			

POPULATION AT DIFFERENT PERIODS.

Population.		Increase.		Slaves.	Increase.
In 1800,	105,602			13,584	
1810,	261,727	From 1800 to 1810,	156,125	44,535	30,951
1820,	420,813	1810	1820,	159,086	35,572
1830,	684,822	1820	1830,	142,382	62,755

The population of none of the towns in Tennessee is given by the new census, with the exception of Nashville, the seat of government, and much the largest town. Some of the other most considerable towns are Murfreesborough, once the seat of government, Clarksville, Franklin, Fayetteville, and Memphis, in West Tennessee; and Knoxville, in East Tennessee.

CHAPTER V.

SOUTH CAROLINA—GEORGIA—ALABAMA—MISSISSIPPI—LOUISIANA.

SOUTH CAROLINA.

THIS state, recently so conspicuous in its opposition to the tariff, is bounded on the north and north-

east by North Carolina; on the southeast by the Atlantic, and on the west by Georgia. It extends from longitude 78° 24' to 83° 30', and from latitude 32° to 35° 8'; is 275 miles long, and 120 broad, and contains 23,000 square miles.

Like some other states, South Carolina is naturally divided into three zones. The maritime zone rises by a very gentle acclivity from the ocean; the rivers are shallow near their mouths, and much of the surface is flooded by the tides and land floods. This outer belt is followed, about the lower falls of the rivers, by a still more sandy zone, which is in turn succeeded by the hilly tract between the head of tides and the mountains. The third or mountainous tract, with the exception of the mountain ridges and

* From Nashville.

† From Washington.

a still increased elevation, differs in no essential respect from the middle or hilly zone. Both the latter sections of South Carolina partake of the general diversity of surface, salubrity of climate, and fertility of soil, which distinguishes the verge of the Apalachian system in all its length. The extreme north-western part of South Carolina is on the great table land from which the sources of the Tennessee flow north and northwest; those of the Chatahooche from southwest; and those of the Savannah and Santee southeast. It is probable that an allowance of two degrees of Fahrenheit will be a moderate estimate for the effect on temperature by difference of level, from the southeast to the northwest angle of this state, and the difference of latitude being $3^{\circ} 10'$, the entire difference of temperature will exceed 5° of Fahrenheit.

The soil of South Carolina is divided into six classes:—1. tide swamp; 2. inland swamp; 3. high river swamp, or low grounds, distinguished by the name of second low grounds; 4. salt marsh; 5. oak and hickory high land; 6. pine barren. The first two classes are peculiarly adapted to the culture of rice and hemp; the third is most favourable to the growth of hemp, corn, and indigo. The salt marsh has been much neglected. The oak and hickory land is remarkably fertile, and well adapted to the culture of corn, as well as indigo and cotton. The pine barren, though the least productive, is so much more salubrious than the other soils in the low country, that a proportion of it is an appendage indispensable to every swamp plantation. The staple commodities of this state are cotton and rice, of which great quantities are annually exported. These articles have so engrossed the attention of the planters, that the culture of wheat, barley, oats, and other crops equally useful, but less profitable, has been almost wholly neglected. So little wheat is raised throughout the state, that considerable quantities are annually imported. Cotton was not raised in any considerable quantities till so late as 1795. Before that period indigo was, next to rice, the most important article of produce; but it is now neglected. Tobacco thrives well. The fruits which flourish best are pears, pomegranates, and watermelons: the latter, in particular, grow to an enormous size, and are superior, perhaps, to any in the world. Other fruits are figs, apricots, nectarines, apples, peaches, olives, almonds, and oranges.

The period of vegetation comprehends, in favourable years, from seven to eight months, commencing in January or February, and terminating in October

or November. The frosts generally, in the months of November, December, January, and February, are too severe for the delicate productions of more southern latitudes. The low country is seldom covered with snow, but the mountains near the western boundary often are. Frost sometimes occurs, but seldom penetrates deeper than two inches, or lasts longer than three or four days. At some seasons, and particularly in February, the weather is very variable. The temperature has been known to vary forty-six degrees in one day. In Charleston, for seven years, the thermometer was not known to rise above 93° , or to fall below 17° above 0. The number of extremely hot days in Charleston is seldom more than thirty in a year; and there are about as many sultry nights in which the heat and closeness of the air are such as to prevent the enjoyment of sound sleep. The low country is infested with all the diseases which spring from a warm, moist, and unelastic atmosphere. Of these, the most frequent are fevers, from which the inhabitants suffer more than from any, or perhaps from all other diseases together. The districts of the upper country enjoy as salubrious a climate as any part of the United States.

A rail-road from the city of Charleston to Hamburg, on the Savannah, opposite to Augusta, is in progress. The whole length of the rail-road, when completed, will be about 135 miles; and according to a report made several months since, eighty-eight miles were then under contract. Several miles, extending from Charleston, were completed in 1830, and a steam car has been placed upon it, moving at the rate of fifteen miles an hour.

South Carolina College, at Columbia, is a flourishing institution, and has been liberally patronized by the state. Colleges have been incorporated in Charleston, Abbeville district, in Beaufort, and in Winnsborough, but they have not taken a higher rank than academies. The Medical College at Charleston, is an institution of some promise. Free schools are established throughout the state, and the sum of 37,000 dollars annually has been appropriated by the legislature for their support.

The Methodists in this state have 54 preachers and 25,114 members; the Baptists, 6 associations, 159 churches, 131 ministers, and 12,316 communicants; the Presbyterians, 77 churches, 46 ministers, 7 licentiates, and 6,671 communicants; the Episcopalians, 34 ministers; there are also some Associate Presbyterians, Lutherans, Roman Catholics, and Unitarians.

TOPOGRAPHY OF THE UNITED STATES.

DISTRICTS AND SEATS OF JUSTICE.

Districts.	Seats of Justice.	Distance. C.* | W.†		Districts.	Seats of Justice.	Distance. C.* | W.†	
Abbeville, N. W.	Abbeville	100	534	Lancaster, N.	Lancaster, C. H.	73	442
Anderson, N. W.	Anderson, C. H.	129	550	Laurens, W. M.	Laurens, C. H.	79	498
Barnwell, S. W.	Barnwell, C. H.	62	562	Lexington, M.	Lexington, C. H.	12	512
Beaufort, S.	Coosawhatchie	147	613	Marion, N. E.	Marion, C. H.	115	424
Charleston, S. E.	Charleston	110	544	Marlborough, N.	Marlborough, C. H.	102	426
Chester, N.	Chester, C. H.	57	448	Newberry, W. M.	Newberry, C. H.	45	493
Chesterfield, N.	Chesterfield, C. H.	102	426	Orangeburgh, M.	Orangeburgh, C. H.	43	538
Colleton, S. E.	Walterborough	93	588	Pickens, N. W.	Pickens, C. H.	157	550
Darlington, N. E.	Darlington, C. H.	86	435	Richland, M.	COLUMBIA		500
Edgefield, W.	Edgefield, C. H.	57	557	Spartanburgh, N.	Spartanburgh, C. H.	104	477
Fairfield, M.	Winnborough	29	476	Sumter, M.	Sumterville	44	481
Georgetown, S.	Georgetown	134	482	Union, N.	Unionville	77	467
Greenville, N. W.	Greenville, C. H.	117	509	Williamsburgh, E.	Kingstree	55	488
Horry, N. E.	Conwayborough	150	459	York, N.	York, C. H.	78	432
Kershaw, M.	Camden	33	467				

POPULATION AT DIFFERENT PERIODS.

Population.		Increase.	Slaves.	Increase.
In 1790, 249,073			107,094	
1800, 345,591	From 1790 to 1800,	96,518	146,151	39,057
1810, 415,115	1800 1810,	69,524	196,365	50,214
1820, 502,741	1810 1820,	86,626	258,475	62,110
1830, 581,459	1820 1830,	78,717	315,365	56,890

POPULATION OF THE DISTRICTS AND OTHER DIVISIONS, AS GIVEN IN THE CENSUS OF 1830.

Abbeville district	28,134	Georgetown district	19,943
Anderson ditto	17,170	Greenville ditto	16,476
Barnwell ditto	19,236	Horry ditto	5,323
Charleston city	30,289	Kershaw ditto	13,545
Charleston Neck	10,054	Lancaster ditto	10,361
St. Andrews' parish	3,727	Laurens ditto	20,863
St. John's Colleton	10,045	Lexington ditto	9,076
St. James, Goose Creek	8,632	Marion ditto	11,208
St. Stephen's	2,416	Marlborough ditto	8,578
Christ Church	3,412	Newberry ditto	17,441
St. James, Santee	3,743	Orangeburgh ditto	18,45
St. Thomas and St. Dennis	3,055	Pickens ditto	14,375
St. Peter's parish	3,834	Richland ditto	11,465
St. Helena	8,799	Columbia town	3,310
St. Luke's	9,659	Spartanburgh district	21,148
Prince William's	9,040	Sumter ditto	28,278
Chester district	19,182	Union ditto	17,908
Chesterfield ditto	8,472	Washington ditto	13,728
Colleton ditto	27,256	Williamsburgh ditto	9,015
Edgefield ditto	30,511	York ditto	17,785
Fairfield ditto	21,546		

Total population, 581,458. Slaves, 315,665.

Charleston, the largest town in the state, is situated on a peninsula, between the rivers Ashley and Cooper, which unite immediately below the city, and form a spacious and convenient harbour, communicating with the ocean at Sullivan's Island, seven miles southeast of the city. The harbour has a bar at its mouth, through which are two channels; the deepest has sixteen feet of water at low tide. It is defended by Fort Pinkney and Fort Johnson, which are on islands, the former two, and the latter four miles below the city; and by Fort Moultrie, on Sullivan's Island. Charleston contains a city-hall, an exchange,

* From Columbia.

a custom-house, a guard-house, a theatre, an orphan-house, an hospital, an alms-house, two arsenals, two markets, a college, and nineteen houses of public worship. The Charleston library contains about 13,000 volumes. The Orphan Asylum is a noble and well endowed institution, which supports and educates nearly 200 orphan children. There are several other charitable societies richly endowed. The city is regularly laid out in parallel streets, which are intersected by others nearly at right angles. The tongue of land on which it is built was originally indented with creeks and narrow marshes, which have

† From Washington.

been filled up; and it is drier and more elevated than most parts of the low country of South Carolina. Many of the houses are elegant, and furnished with piazzas. It is much the largest town in the state, and was formerly the seat of government. It has an extensive commerce: the shipping owned here in 1816, amounted to 36,473 tons; in 1820, to 28,403 tons. That dreadful distemper, the yellow fever, has made frequent ravages in Charleston, but its effects have been chiefly confined to persons from more northern situations; and the climate of the city is accounted healthy to the native inhabitants, more so than that of most other Atlantic towns in the southern states. Its superior salubrity attracts the planters from the surrounding country, and it is the favourite resort of the wealthy from the West Indies. It affords much agreeable society, and is reckoned one of the gayest towns in the United States.

Dr. Ramsay, the celebrated philosopher, has done much to promote a knowledge of South Carolina; and Dayton's work has materials of value to the historian.

Mr. Robert Mills, in an elaborate and recent work on the statistics of South Carolina, has furnished a minute account of the benevolent, literary, and other institutions which dignify the city of Charleston. From his publication the following extract is made.

"After this enumeration," says Mr. Mills, "of benevolent establishments in Charleston, the remark made in the beginning, that this city possesses a greater number of charitable institutions, in proportion to its population, than any other in the union, will not be regarded as unfounded in fact; and truly it is cause of humble rejoicing, that there exists such a spirit of piety in a spot where so great a field for doing good is opened. Charleston is the centre of a vast circle, which will be benefited in proportion to the exertions made in it to promote the cause of virtue and truth.

"The Medical Society, for the advancement of the healing art, was formed in 1789, and incorporated in 1794. It has contributed much to medical science, and the public weal. In all cases respecting the medical police of the city, application was made to this society for their advice, and it always cheerfully gave it, and essentially contributed to form beneficial regulations for preserving the health of the inhabitants.

"These institutions emanated from this medical society, of great public utility: the Humane Society; the Charleston Dispensary; and the Botanic Garden; all still in operation, except the latter, which has declined.

"The Medical Society, within two years past, has enlarged its sphere of usefulness, having established a college, and endowed professorships; a course of lectures is annually delivered to students in medicine, and diplomas are granted to such as take their degrees. This society has been eminently successful, and now possesses able professors. The first year of its duties, (Nov. 1824,) the number of students was between 40 and 50; the second year, the number was nearly doubled; and there is every prospect that this institution will command a most extensive patronage. The number who have graduated and received diplomas amounts to 33.

"The St. Cecilia Society is of very old standing. It was established some time in 1762. Music has always been highly admired and patronized in this city, and still is, though more in a private way.

"It has contributed much to establish a good taste for music in the state. At one time it gave annual salaries of 2 to 3000 dollars, to secure first-rate professors.

"The Free Masons, in this city, constitute one of the largest and most respectable associations in the United States. They comprise 14 lodges, and include about 1500 members; their charities amount annually to near \$1500.

"The Charleston Library Society was established in 1748, and incorporated in 1754. It is composed of upwards of 300 members, and comprises now between 13 and 14,000 volumes, besides a number of fine engravings, port-folios of views, &c. In the great fire that took place in 1778, a large portion of the original library was destroyed, with a valuable philosophical apparatus.

"Its capital in bank shares and stock, amounts to \$11,600, and yearly income to \$3,000. Average annual expenses, \$2,500, including the purchase of books and contingencies.

"This library occupies the principal part of the attic story of the court-house.

"There have also been founded in this city, within a few years, two other library societies, the Franklin and Ramsay, the latter composed chiefly of young men.

"The Literary and Philosophical Society is an institution that does great honour to the state. It was founded in 1813, and comprises a large mineralogical cabinet, with a number of subjects of natural history and botany.

"The Museum is situated on Chalmers-street, nearly fronting the city square, and is well stored with curious subjects in natural history, Indian antiquities, foreign and native works of art, &c.

"The institutions for educating youth in this city are both numerous and highly respectable. At the head of these is the Charleston College, established soon after the revolutionary war. It commenced as an academy under the superintendence of the Rev. Dr. Robert Smith, (afterwards Bishop of the Protestant Episcopal church.) By his exertions in obtaining the best qualified classical teachers, it soon was incorporated as a college, of which he was appointed as principal. Bishop Smith held this office until 1798, when he resigned it.

"After the state institution went into operation at Columbia, this college declined, and remained inoperative until within a few years, when an effort was made by a few gentlemen to restore its usefulness,—in which they succeeded. It is now upon a permanent footing, possesses able teachers, and promises to redeem its original character. This important institution is now under the care of trustees.

"The first Free School in this state, was founded in Charleston, as early as 1712; since which, extensive means have been created to dispense knowledge among the destitute, both by the state, and by various benevolent societies, already noticed. There are four Free Schools established in Charleston, under legislative patronage. The liberal salary of \$1,200 is allowed to each teacher. These, with the numerous private academies and schools distributed through the city, evince the particular attention paid to this most important subject.

"Many valuable institutions, devoted to the instruction of female youth, are established in Charleston, where every branch of useful, elegant, polite, and ornamental education, is taught.

"Besides the circulating libraries, (of which there are several, both extensive and respectable, in Charleston,) there are innumerable fountains of knowledge opened in every part of the city. Every public house has a reading-room, where the periodical papers of the day, and those from different parts of the union, are received. A taste for reading and polite literature is extending itself generally among our citizens, and a happy circumstance it is, as during a certain part of the year considerable leisure occurs, the season of business being of limited duration.

"Among the private establishments of this character, 'Walker's reading-room' is the most extensive, both in the variety and interest of the periodical productions received there, and particularly in English literature, independent of newspapers.

"Every bookstore presents a mental feast, and for number, elegance, and richness of literary lore, are not exceeded by any city in the union. Wherever

our steps are directed, the improvement of Charleston in literature and the arts manifests itself. The bookstores of Messrs. Hurlbut, Mill, Berret, and many others, are not only extensive in the number, but choice in the selection of their books.

"In reviewing the springs of knowledge in this city, we must not forget to mention one, from which much benefit is anticipated to be derived, namely, the Apprentices' Library Society, instituted in 1824, expressly to benefit the youth devoting their attention to mechanical pursuits.

"The library at present consists of upwards of 3,000 volumes, mostly presented by donation. The subscription amounts annually to two dollars, which is chiefly laid out in the purchase of suitable books. The library room is over the centre market-house, the use of which has been liberally granted by the commissioners of the market.

"There are four daily public journals printed in this city; their titles, according to seniority, are, the City Gazette, Courier, Southern Patriot, and Charleston Mercury; all edited with ability, and conducted upon liberal principles. There are besides, three weekly journals issued, devoted principally to religious subjects, the Southern Intelligencer, Catholic Miscellany, and Wesleyan Journal. The Gospel Messenger, (an Episcopal work,) and Medical Journal, are published monthly, besides a work devoted to agricultural subjects."

Columbia, the seat of government, is regularly laid out on an elevated plain on the banks of the Congaree. Georgetown is on Winyaw Bay, near the mouth of the Pedee, thirteen miles from the sea. It is well situated for trade, being in the neighbourhood of fertile lands, and connected by the Pedee and its branches with an extensive back country; but there is a bar at the mouth of Winyaw Bay, which prevents the entrance of vessels drawing more than eleven feet water. Beaufort is on an island, seventy-two miles southwest of Charleston.

It deserves to be stated, that the botany of this state and of Georgia, has found an able writer in the late Stephen Elliot, Esq., a gentleman of profound science in natural history. His work is in two volumes, large octavo, 1821-4.

GEORGIA.

Is bounded on the north by Tennessee, on the northeast by South Carolina, on the southeast by the Atlantic, by Florida on the south, and by Alabama on the west. It extends from longitude 80° 50' to 86° 6', and from latitude 30° 30' to 35°. Length

from north to south, 300 miles; mean breadth, 203; and area, 61,000 square miles.

Georgia is divided by the hand of nature into three zones, with very distinct features. The lowest, and what may be called the tropical zone, rises by a very slow acclivity from the Atlantic ocean, commencing in a series of islands. This is, in its oceanic margin, a recent alluvion; and is followed by a sandy tract of little more elevation, but reaching to the falls of the rivers. The third, or hilly and finally mountainous section, is the most extensive, fertile, and salubrious. From the level of the Atlantic Islands to the mountain vales of Chatahooche and Etowah Rivers, must be an elevation of 12 or 1500 feet; at the lowest an equivalent to 2° of latitude; which, added to $4^{\circ} 38'$, gives a difference of $7^{\circ} 38'$ in temperature. The mountainous northern extremity rises into an elevation favourable to apples and the grasses; while the southern extremity on the Apalachicola, Suwanne, St. Mary's, Santilla, and Alatanaha, has a temperature suitable to the sugar cane, orange, olive, date, and lemon. Between those extremes vegetable production has an extensive range. To those already named, may be added cotton, rice, tobacco, and indigo; of fruits, the peach, fig, pomegranate, plum, &c. The sea border is a region of palms, and has a mean temperature at least two degrees above that of equal latitudes in the basin of Mississippi. In summer the Atlantic border is a real tropical climate, whilst towards North Carolina and Tennessee the mountain vales smile under a mitigated sun. Cotton, rice, and sugar, may be regarded as its staples. The former has, however, so far predominated, the Atlantic islands producing a peculiar kind of superior value, that it might, without much error, be considered the exclusive staple of the state. The sweet orange and sugar cane can be cultivated with success along the whole ocean border, and for some distance inland.

In the northern part of Georgia there are interesting falls on the head waters of Savannah River. The river Terrors descends, in the space of a mile, 300 feet, and has one cataract of sixty feet nearly perpendicular. Toccoa Falls, on a small rivulet, are a beautiful cascade of 186 feet perpendicular.—The principal mineral waters in Georgia are the Indian Springs, which are west of Milledgeville, and much visited; and Madison Springs, northwest of Athens. Valuable gold mines have been lately discovered in the northern parts of the state, near the sources of the Chatahooche, Tallapoosa, and Coosa.

Many writers have favoured the public with observations on the climate and diseases of Georgia; but a general reference to their papers in the periodi-

cals must suffice. Some interesting remarks of the late governor, Henry Ellis, of this state, merit a more particular notice. This distinguished individual, more than seventy years ago, drew up a number of valuable reflections on the climate, in a communication to a friend, and their pertinency even at this day will be seen by the contemplative reader. His letter is dated July 17, 1758, and may be seen in the American Medical and Philosophical Register, vol. 2, published at New York, and edited by Professors Hosack and Francis, of that city.

"Though some weeks have passed since I wrote you," says Gov. Ellis to his friend, "yet so little alteration has happened in the state of our affairs, that nothing occurs to me, relative to them, worth committing to paper. This, indeed, I need not regret, as one cannot sit down to any thing that requires much application, but with extreme reluctance; for such is the debilitating quality of our violent heats in this season, that an inexpressible languor enervates every faculty, and renders even the thought of exercising them painful.

"It is now about three o'clock; the sun bears nearly S. W. and I am writing in a piazza, open at each end, on the northeast side of my house, perfectly in the shade; a small breeze at S. E. blows freely through it; no buildings are nearer, to reflect the heat, than sixty yards; yet in a thermometer hanging by me, made by Mr. Bird, and compared by the late Mr. George Graham, with an approved one of his own; the mercury stands at 102. Twice it has risen this summer to the same height, viz. on the 28th of June, and the 11th of July. Several times it has been at 100, and for many days successively at 98; and did not in the nights sink below 89. I think it highly probable, that the inhabitants of this place breathe a hotter air than any other people on the face of the earth. The greatest heat we had last year was but 94, and that but once; from 84 to 90 were the usual variations; but this is reckoned an extraordinary hot summer. The weatherwise of this country say it forebodes a hurricane; for has it always been remarked, that these tempests have been preceded by continual and uncommon heats. I must acquaint you, however, that the heats we are subject to here, are more intense than in any other parts of the province, the town of Savannah being situated upon a sandy eminence, and sheltered all around with high woods. The people actually breathe so hot an air as I describe; yet this very spot, from its height and dryness, is reckoned equally healthy with any other in the province.

"I have frequently walked a hundred yards under an umbrella, with a thermometer suspended from it

by a thread, to the height of my nostrils, when the mercury has risen to 105, which is prodigious. At the same time I have confined this instrument close to the hottest part of my body, and have been astonished to observe, that it has subsided several degrees. Indeed, I never could raise the mercury above 97 with the heat of my body.

"You know, dear sir, that I have traversed a great part of this globe, not without giving some attention to the peculiarities of each climate; and I can fairly pronounce, that I never felt such heats any where as in Georgia. I know experiments on this subject are extremely liable to error; but I presume I cannot now be mistaken; either in the goodness of the instrument, or in the fairness of the trials, which I have repeatedly made with it. The same thermometer I have had twice in the equatorial parts of Africa; as often at Jamaica, and the West-India islands; and, upon examination of my journals, I do not find that the quicksilver ever rose in those parts above the 87th degree, and to that seldom; its general station was between the 79th and 86th degree; and yet I think I have felt those degrees, with a moist air, more disagreeable than what I now feel.

"In my relation of the late expedition to the north-west, if I recollect right, I have observed, that all the changes and variety of weather, that happen in the temperate zone, throughout the year, may be experienced at Hudson's Bay settlements in twenty-four hours. But I may now extend this observation; for in my cellar the thermometer stands at 81, in the next story at 102, and in the upper one at 105, yet these heats, violent as they are, would be tolerable, but for the sudden changes that succeed them. On the 10th of December last, the mercury was at 86; on the 11th it was so low as 38 of the same instrument.

What havoc must this make with a European constitution? Nevertheless, but few people die here out of the ordinary course; though, indeed, one can scarce call it living, merely to breathe, and trail about a vigourless body; yet such is generally our condition, from the middle of June to the middle of September."

The University of Georgia consists of a college called Franklin College, established at Athens, and of an academy, either established, or to be established, in each county. This body of institutions is under the direction of a *Senatus Academicus*, consisting of the governor and senate of the state, and fifteen trustees. The *Senatus Academicus* appoints a board of commissioners in each county, to superintend the academy of the county and the inferior schools. In 1817, 200,000 dollars were appropriated by the legislature for the establishment of free schools throughout the state. "In 1801," says Mr. Sherwood,* "only six academies had been incorporated in the state." "The importance of education, about 1811, seemed to be more appreciated; and academies sprang up in almost every town. Few persons born since that period are entirely destitute of education; but thousands who were brought into the world before 1800, know not a letter." The total number of academies is now nearly ninety.

The Baptists in this state have 12 associations, 390 churches, 205 ministers, and 31,797 communicants; the Methodists, 64 preachers, and 27,038 members; the Presbyterians, 55 churches, 31 ministers, and 3,034 communicants; the Christians, 3 churches, and 28 ministers; the Episcopalians, 4 churches and 4 ministers; the Roman Catholics, 3 churches and 3 ministers; there are also some Lutherans, Friends, and Jews.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Whites.	Coloured.	Total Population.	County Towns.	Distance.	
					M.†	W.‡
Appling, S. M.	1,284	184	1,468	Appling, C. H.	125	787
Baker, S. W.	977	276	1,253	Byron	155	797
Baldwin, M.	2,724	4,565	7,289	MILLEDGEVILLE		642
Bibb, M.	4,138	3,005	7,143	Macon	35	677
Bryan, S. E.	723	2,416	3,139	Bryan, C. H.		
Bullock, E. M.	1,933	653	2,586	Statesborough	117	671
Burke, E.	5,066	6,767	11,833	Waynesborough	37	689
Butts, N. M.	3,225	1,687	4,912	Jackson	51	707
Camden, S. E.	1,458	3,120	4,578	Jeffersonton	212	744
Campbell, N. W.	2,694	629	3,323	Campbellton	134	715
Carroll, N. W.	2,723	696	3,419	Carrollton	153	746
Chatham, E.	4,325	9,905	14,230	Savannah	167	662
Clarke, N. M.	5,438	4,738	10,176	Watkinsville	69	623
Columbia, N. M.	4,471	8,135	12,606	Applingville	93	602
Coweta, N. W.	3,634	1,372	5,006	Newman	129	722

* Gazetteer of Georgia, second edition, 1829.

† From Milledgeville.

‡ From Washington.

Counties.	Whites.	Coloured.	Total Population.	County Towns.	Distance	
					M.*	W.†
Crawford, w. m.	3,591	1,723	5,314	Knoxville	60	702
Decatur, s. w.	2,541	1,307	3,848	Bainbridge	206	848
Dekalb, n. w.	8,376	1,671	10,047	Decatur	117	680
Dooly, w. m.	1,787	348	2,135	Berrien	97	739
Early, s. w.	1,505	546	2,051	Blakely	227	869
Effingham, e.	1,746	1,223	2,969	Willoughby	181	671
Elbert, n.	6,501	5,853	12,354	Elberton	101	579
Emanuel, e. m.	2,168	513	2,681	Swainsborough	79	633
Fayette, n. w.	4,268	1,233	5,501	Fayetteville	187	700
Franklin, n.	7,712	2,423	10,135	Carnesville	114	578
Glynn, s. e.	597	3,970	4,467	Brunswick	200	733
Greene, n. m.	5,026	7,525	12,551	Greensborough	44	628
Gwinnett, n. w.	10,938	2,282	13,220	Lawrenceville	93	656
Habersham, n.	9,733	915	10,648	Clarksville	144	608
Hall, n. w.	10,573	1,182	11,755	Gainesville	123	626
Hancock, n. m.	4,607	7,215	11,822	Sparta	24	618
Harris, w.	2,831	2,274	5,105	Hamilton	134	776
Henry, n. w. m.	7,991	2,576	10,567	McDonough	85	687
Houston, w. m.	5,161	2,208	7,369	Perry	60	702
Irwin, s. m.	1,066	114	1,180	Irwin, C. H.		
Jackson, n.	6,184	2,816	9,000	Jefferson	98	614
Jasper, m.	6,767	6,364	13,131	Monticello	35	668
Jefferson, e. m.	3,603	3,706	7,309	Louisville	52	644
Jones, m.	6,469	6,873	13,342	Clinton	22	665
Laurens, m.	3,188	2,390	5,578	Dublin	47	689
Lee, w. m.	1,367	307	1,674	Pindertown	130	772
Liberty, s. e.	1,588	5,646	7,234	Riceborough	202	692
Lincoln, n. m.	2,824	3,313	6,137	Lincolnton	100	570
Lowndes, s.	2,113	340	2,453	Franklinville	187	829
Madison, n.	3,365	1,261	4,626	Danielsville	92	600
McIntosh, s. e.	1,095	3,903	4,998	Darien	187	720
Marion, w. m.	1,327	109	1,436	Marion, C. H.	174	816
Meriwether, n. w.	3,018	1,406	4,424	Greenville	111	753
Monroe, m.	8,836	7,366	16,202	Forsythe	60	702
Montgomery, m.	934	335	1,269	Mount Vernon	89	721
Morgan, n. m.	5,146	6,877	12,023	Madison	44	648
Muscogee, w.	2,261	1,247	3,508	Columbus	120	762
Newton, n. w. m.	8,131	3,023	11,154	Covington	60	662
Oglethorpe, n. m.	5,554	8,004	13,558	Lexington	89	603
Pike, w. m.	4,362	1,694	6,056	Zebulon	86	725
Pulaski, m.	3,117	1,782	4,899	Hartford	67	709
Putnam, m.	5,512	7,744	13,256	Eatonton	22	650
Rabun, n.	2,114	61	2,175	Clayton	174	611
Randolph, w.	1,508	683	2,191	Randolph, C. H.	170	812
Richmond, e.	5,163	6,481	11,644	Augusta	90	580
Scriven, e.	2,387	2,389	4,776	Jacksonborough	144	634
Talbot, w.	3,839	2,101	5,940	Talbotton	112	754
Taliaferro, n. m.	2,162	2,770	4,934	Crawfordsville	47	615
Tatnall, e. m.	1,519	520	2,039	Perry's Mills	115	757
Telfair, m.	1,569	567	2,136	Jacksonville	111	753
Thomas, s.	2,127	1,169	3,296	Thomasville	235	877
Troup, w.	3,607	2,192	5,799	Lagrange	133	752
Twiggs, m.	4,495	3,534	8,029	Marion	37	697
Upton, n. w. m.	4,444	2,569	7,013	Upton, C. H.	87	729
Walton, n. w. m.	7,763	3,168	10,931	Monroe	72	641
Ware, s.	1,132	62	1,194	Waresborough	161	776
Warren, n. m.	6,044	4,802	10,846	Warrenton	49	617
Washington, m.	5,905	3,915	9,820	Sandersville	27	669
Wayne, s. e.	676	286	962	Waynesville	190	721
Wilkes, n. w.	5,265	8,972	14,237	Washington	64	573
Wilkinson, m.	4,603	1,956	6,558	Irwin	20	662
Total.			516,567, of whom 217,470 are slaves.			

POPULATION AT DIFFERENT PERIODS.

Population.		Increase.		Slaves.	Increase.
In 1749,	6,000				
1790,	82,548			28,264	
1800,	162,686	From 1790 to 1800,	80,138	59,699	30,435.
1810,	252,433	1800 1810,	89,747	105,218	45,519
1820,	348,988	1810 1820,	88,456	149,656	44,438.
1830,	516,567	1820 1830,	165,578	217,470	67,814

POPULATION OF THE PRINCIPAL TOWNS

Savannah, 7,303	Macon, 2,609	Milledgeville, 1,599.
Augusta, 6,696	Columbia, 2,000	Athens, 1,100.

* From Milledgeville.

† From Washington.

Savannah, the largest town, and the centre of commerce for the state, is on the Savannah River, eighteen miles from the bar at its mouth. Vessels drawing fourteen feet water can come up to the city; larger vessels receive their cargoes three miles below. Augusta is on the Savannah, just below the falls, 127 miles by land north of the Savannah. Large quantities of cotton and other produce are brought to Augusta from the back country, and carried down the river to Savannah. Milledgeville, the seat of government, is on Oconee River, near the centre of the state. Darien is on Alatomaha river, twelve miles from the bar at its mouth. It will probably soon be a place of importance, as it is the centre of commerce for the country on the Alatomaha and its branches, which is rapidly becoming populous. Sunbury, Brunswick, and St. Mary's, are on the sea-coast, southwest of Savannah. Petersburg is on the Savannah, fifty-three miles above Augusta. Washington is fifty miles northwest of Augusta. Athens is on a branch of the Oconee, about seventy miles north of Milledgeville.

ALABAMA

Is bounded on the north by Tennessee, on the east by Georgia, on the south by Florida, and the Gulf of Mexico, and on the west by Mississippi. It extends from longitude 85° to $88^{\circ} 30'$, and from latitude $30^{\circ} 10'$ to 35° ; is 336 miles long and 195 wide, containing 51,770 square miles.

Alabama, like several other states, is naturally divided into three zones; the northern, traversed by the southwestern extremity of the Apalachian chain, and drained by numerous small rivers flowing into Tennessee, may be considered, if not mountainous, at least very broken, and most pleasantly diversified. The middle or central zone, drained by the various branches of the Coosa, Cahawba, Tuscaloosa, and Tombigbee rivers, gradually assumes a more level surface, and has a soil in general very inferior to the northern. The southern or Pine region is still less broken by hills than the central, and contracted by the western projection of Florida to a strip of sixty miles wide, along Mobile Bay, terminates in the sandy alluvium of the Mexican Gulf.

Extending over almost five degrees of latitude, and rising from the level of the sea on the south to a considerable elevation, perhaps 1000 feet in the north, this state exhibits a marked difference of temperature. It touches rather than enters the region of the sugar cane, but admits in all its extent of the profitable cultivation of cotton. Fruits, from the fig to the apple, flourish abundantly; but even the south-

ern section does not admit the successful production of the orange. Small grain is cultivated, though maize predominates as a crop. Cotton is the staple of the state, but might be superseded by tobacco or indigo, and perhaps by other vegetables. Alabama has been too recently settled to admit the full development of its metallic wealth; nor, except iron, do the known specimens promise great abundance. The climate is mild; indeed, it might be with safety called delightful. Much of the soil is fertile, none utterly barren. By navigable rivers this state possesses great commercial advantages, though comprising only one direct outlet to the sea. Besides many of less note, Alabama is watered by the Tennessee, Tombigbee, Tuscaloosa, Alabama, Cahawba, Coosa, Talapoosa, and Conecuh rivers.

When Alabama was admitted into the union in 1819, the government granted to the state, on certain conditions, one section, or the thirty-sixth part of every township, for the support of schools, and two townships for the establishment of a university. The prospects of the University of Alabama seem to be pleasing. In 1826, the number of acres appropriated for its benefit which had been sold, was 12,718; producing, with interest and rents, the sum of 276,956 dollars. There remained unsold, 33,361 acres, and it is supposed the proceeds of the whole will not be much short of 750,000 dollars.

The University of Alabama, since the period of this European publication, has gone into successful operation. That valuable record of American affairs, the American Almanac, of 1834, has the following account of this institution.

"This institution was incorporated by the General Assembly, Dec., 1820, under the title of the 'University of the State of Alabama;' and, in 1821, two trustees from each judicial circuit were elected by the legislature for three years, the governor of the state being *ex officio* president of the board. The trustees were authorized and required to sell by auction or to rent the University lands; to select a site for the institution; to superintend the erection of the buildings; to appoint officers and fix their salaries, to prescribe the course of studies, and make regulations and laws for the University; and to make an annual report of its financial concerns to the legislature. In the session of 1827-8, the university was placed by the legislature in a fine, healthy situation, about a mile and a half to the east of the state-house in Tuscaloosa, 268 miles NNE. of New Orleans. According to an official report, dated Jan. 14, 1830, 21,845 3-4 acres of the land had been sold for the sum of \$304,651 06, of which \$111,712 59 had been

invested in 6 per cent stock; and 24,234 1-4 acres remained unsold.—The buildings already erected consist of a Rotunda, a circular edifice of three stories, in the centre of the grounds, 70 feet in diameter, and 70 in height, the ground floor or lower story being used for a chapel, for commencements, examinations, &c., the 2d story forming a circular gallery for spectators, and the 3d story forming the library room;—of three edifices, or dormitories, all three stories high, for the accommodation of students, two of them 60 feet by 30, and the other 90 by 30, the two former affording accommodations for 48 students each, the latter for 72;—of a laboratory containing the chemical and philosophical apparatus, cabinet of minerals, and several lecture-rooms;—of a hotel in which the steward resides;—and of four houses for professors. The cost of these buildings has not exceeded \$100,000. In order to complete the plan, there are required three more dormitories, four more houses for professors, and another hotel. The university went into operation in April, 1831, a president and three professors having been previously appointed; and the first commencement

was held in Dec., 1832. The library consists of 2,000 volumes, and about a thousand additional volumes have been ordered."

Five per cent of the net proceeds arising from the sale of the public lands is appropriated to making roads and canals, and improving the navigation of rivers. As the condition of these grants, the state agrees that no lands belonging to the United States shall be taxed for any purpose for the term of five years from the day of sale, and that all the navigable waters within the state shall for ever remain public highways, free to all the citizens of the United States, without any tax or toll. A water communication, to unite the Tennessee with the Alabama, is contemplated.

The Baptists in this state have 12 associations, 219 churches, 130 ministers, and 8,953 communicants; the Methodists, 44 preachers and 13,504 members; the Presbyterians, 38 churches, 27 ministers, 6 licentiates, and 1,669 communicants; the Roman Catholics, 9 ministers; the Episcopalians, 2 ministers.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population.	County Towns.	Distance.	
			T.*	W.†
Autauga, M.	11,872	Washington	129	869
Baldwin, S.	2,324	Blakely	228	1020
Bibb, M.	6,305	Centreville	39	837
Blount, N. M.	4,233	Blountsville	110	748
Butler, S. M.	5,634	Greenville	143	903
Clarke, S. M.	7,584	Clarksville	146	969
Conecuh, S.	7,444	Sparta	205	971
Covington, S.	1,522	Montezuma	187	947
Dale, S.	2,021	Dale, C. H.	242	1002
Dallas, M.	14,017	Cahawba	96	886
Fayette, N. M.	3,470	Fayette, C. H.	50	874
Franklin, N. W.	11,078	Russellville	127	804
Greene, W. M.	15,025	Erie	47	896
Henry, S. E.	3,955	Columbia	260	872
Jackson, N. E.	12,703	{ Bellefonte	172	686
Jefferson, M.	6,855	{ Woodville	185	708
Lauderdale, N. W.	11,782	Elyton	59	799
Lawrence, N.	24,984	Florence	146	796
Limestone, N.	14,848	Moulton	102	779
Lowndes	9,421	Athens	130	751
Madison, N.	28,011	Lowndes, C. H.	138	882
Marengo, S. M.	7,742	Huntsville	155	726
Marion, N. W.	4,058	Linden	78	914
Mobile, S. W.	3,071	Pikeville	118	850
Mobile, city	3,194	{ Mobile	226	1033
Monroe, S. M.	8,780	Claiborne	157	949
Montgomery, S. M.	12,694	Montgomery	119	859
Morgan, N.	9,053	Somerville	135	751
Perry, M.	11,509	Perry, C. H.	61	865
Pickens, W.	6,620	Pickens	48	906
Pike, S. E.	7,103	Pike, C. H.	179	909
St. Clair, N. E. M.	5,975	Ashville	129	747
Shelby, M.	5,521	Shelbyville	73	803
Tuscaloosa, M.	13,616	TUSCALOOSA		858
Walker, N. M.	2,202	Walker, C. H.	47	834
Washington, S. W.	3,478	Washington, C. H.	146	982
Wilcox, S. M.	9,469	Canton	113	912
Total	308,997, of whom 117,294 are slaves.			

* From Tuscaloosa.

† From Washington.

TOPOGRAPHY OF THE UNITED STATES.

POPULATION AT DIFFERENT PERIODS.

Population.		Increase.	Slaves.	
In 1810, less than 10,000				
1816,	29,683			
1818,	70,542			
1820,	127,901		In 1820,	41,879
1827,	244,041		1827,	93,002
1830,	308,997	From 1820 to 1830,	1830,	117,294

Mobile is on the western channel of the Mobile River, near its entrance into Mobile Bay. It is built on a high bank, in a dry and commanding situation; but the approach to the town for vessels drawing more than eight feet of water is difficult and circuitous. The country in the rear is unsettled pine woods. While this town was under the dominion of the French and Spaniards, it was a mere military post. When it came into possession of the United States, in 1813, it contained only 100 houses; but since the rapid progress of the settlements on the Tombigbee and the Alabama, an attempt has been made to make it the depot for the produce of the country on those rivers. There is, however, a vigorous rivalry between this place and Blakely. Blakely is on the Tensaw, or eastern outlet of the Mobile, ten miles east-north-east of Mobile. It is a new town, laid out in 1813, and has considerable advantages as an emporium for commerce. The same wind that enables a vessel to enter Mobile Bay will carry her to the wharves of Blakely. Another advantage is an open road to the rapidly improving country on the Alabama. Vessels drawing twelve feet of water can enter the port at full tide. The town is abundantly supplied with excellent water.—Huntsville is a flourishing town in Madison county, on Indian Creek, ten miles north of the Tennessee. The surrounding country is fertile, and rapidly increasing in population.

MISSISSIPPI.

This state has for its northern boundary the state of Tennessee; for its eastern that of Alabama; its southern is formed partly by the Gulf of Mexico, and partly by Louisiana; and its western by Louisiana and the Arkansas territory; from which it is divided by the Mississippi. The state extends from longitude 88° 30' to 91° 50', and from latitude 30° 08' to 35°. Length from north to south, 338 miles. Mr. Darby states that the area of this state has never been very accurately determined; but estimates it at above 51,000 square miles, with a mean width of 150 miles.

The state of Mississippi is washed on its western border by the Mississippi; the Tennessee touches the northeast angle, and the sources of the Tombig-

bee, Pascagoula, Pearl, Amite, Homochitto, and Yazoo, drain the interior. Apart from the islands of the Gulf of Mexico, the soil of Mississippi is divisible into three portions. First, the alluvial borders of the rivers; second, the bluffs adjacent to the Mississippi overflow; and third, pine forest land. The flat margin of the Mississippi on the left or east bank, is less valuable than similar soil on the opposite side. This difference is produced by the bluffs, confining the water, and subjecting the river border to more frequent and more durable inundation than takes place on the west side, where the waters are freely drained into remote swamps and outlets. Rising from the Mississippi alluvium, the bluffs are followed by a waving, productive country. This commences in Louisiana, as low down as Iberville, and with the mere interruptions of the streams, stretches into Tennessee, with a width of from ten to thirty or forty miles. It may be doubted whether, every thing considered, the bluff zone of Mississippi is exceeded in value by any tract in the United States. In its natural state, and so in great part it still continues, it was covered with a heavy forest, with a great variety of vines and underwood. In the primitive settlements near Natchez, tobacco, indigo, and cotton, have been successfully staples, and all have been produced luxuriantly. The latter has prevailed within the last thirty years. Much excellent land exists along the streams over the whole state, and when brought under cultivation, produces similar vegetables with the bluff lands. The pine forest, with other interval land of various but inferior quality, constitutes the greater part of the surface of the state, and will preclude a dense population, except in detached places, unless objects of culture can be introduced suitable to the now useless soils.

What has been stated respecting the climate of Alabama, may be repeated with regard to that of Mississippi, except that, being more exposed to the winds of the northwest, the temperature of the latter is lower than that of the former in winter. Neither sugar cane nor the orange can be cultivated above latitude 31°, nor even below that line, to any advantage, in the state of Mississippi. The winters are very unequal in point of temperature, and often severe in the vicinity of Natchez. Snow, more or less,

occurs annually, and the thermometer has shown a depression of the mercury to 12° above zero.

About one half of the territory of this state, embracing the northern and northeastern parts, is in the possession of the Chickasaw and Choctaw Indians. In 1820, the Choctaws ceded to the United States a large tract, including all their lands on the Mississippi below the mouth of the Arkansas.

In the act of congress admitting this state into the union, the government agreed, that, after paying a debt of 1,250,000 dollars to Georgia, and indemnifying certain claimants, five per cent of the net proceeds of the public lands lying within the state, shall be applied to roads and canals. As the condition of this grant, the state has provided, that the public lands shall be exempted from all taxes while belonging to the United States, and for five years from the day of sale; that lands belonging to citizens of the United States residing without the state, shall never be taxed higher than lands belonging to persons residing therein; and that the river Mississippi, and the navigable rivers or waters leading into the same or into the Gulf of Mexico, shall be common highways, and for ever free of toll or duty to all citizens of the United States. In 1829, a Board of Internal

Improvement was organized by the legislature, consisting of the governor and three commissioners, The Board was authorized to employ a civil engineer, and to negotiate a loan of 200,000 dollars upon the credit of the state, to be appropriated to the improvement of the navigable streams and public roads.

The state has a Literary Fund, derived from "escheats, confiscations, forfeitures, and all personal property accruing to the state as derelict; fines, and pecuniary penalties, and forfeitures, recovered of persons for the visitation of any penal statute, or for crimes and misdemeanors." No portion of this fund can be distributed till it shall amount to 50,000 dollars, except as much as shall be necessary for the education of the children of the poor. Increasing attention has of late been paid to the subject of education, and there are now several flourishing seminaries in this state.

The Methodists in this state have 23 preachers, and 5,918 members; the Baptists, 3 associations, 58 churches, 12 ministers, and 1,714 communicants; the Presbyterians, 25 churches, 21 ministers, 3 licentiates, and about 950 communicants; the Episcopalians, 4 ministers; and there are some Roman Catholics.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population.	County Towns.	Distance. J.* | W.†	
Adams, s. w.	12,129 }	Natchez	112	1146
Natchez, city	2,790 }	Liberty	122	1156
Amite, s. w.	7,943	Port Gibson	67	1101
Claiborne, w.	9,818	Gallatin	53	1087
Copiah, s. w. M.	7,024	Williamsburgh	83	1087
Covington, s. M.	2,549	Meadville	105	1139
Franklin, s. w.	4,622	Leaksville	171	1046
Greene, s. E.	1,849	Pearlington	200	1135
Hancock, s.	1,961	JACKSON		1035
Hinds, M.	8,619 }	Raymond	19	1053
Jackson, s. E.	1,789	Jackson, C. H.	213	1073
Jefferson, s. W.	9,755	Fayette	93	1127
Jones, s. M.	1,471	Ellisville	134	1054
Lawrence, s. M.	5,321	Monticello	88	1120
Lowndes	3,342	Columbus	134	900
Madison, E.	4,973	Livingston	31	1066
Marion, s.	3,701	Columbia	120	1097
Montoe, E.	3,855	Hamilton	150	916
Perry, s. E.	2,285	Augusta	137	1063
Pike, s.	5,402	Holmesville	151	1128
Rankin, w.	2,084	Brandon	16	1051
Simpson, s. M.	2,666	Westville	56	1090
Warren, w.	7,861	Vicksburgh	54	1089
Washington	1,976	Princeton	119	1154
Wayne, E.	2,778	Winchester	165	1008
Wilkinson, s. w.	11,693	Woodville	148	1182
Yazoo, w.	6,550	Benton	84	1075

* From Jackson.

† From Washington.

POPULATION AT DIFFERENT PERIODS.

The country now forming the states of Mississippi and Alabama, was erected into a territorial government by the name of the Mississippi territory, in 1798, and so continued till 1817. Population in 1800, 8,850; in 1810, 40,352 :—of Mississippi alone, in 1816, 45 929.

	Increase.	Slaves.	Increase.
In 1820, 75,448		32,814	
1830, 136,806	From 1820 to 1830, 61,358	65,659	32,845

Natchez, the largest town, contained 2,184 inhabitants in 1820; in 1830, 2,790. Some of the other most considerable towns are Port Gibson, Vicksburgh, Woodville, and Monticello.

Mr. Schoolcraft has recently published a work on the sources of the Mississippi, of great research and value. It deserves a close reading with his former work on the Missouri and Arkansas territory.

LOUISIANA

Is bounded on the north by the Arkansas territory, on the east by the state of Mississippi, on the south by the Gulf of Mexico, and on the west by the Salina River, which separates it from Texas, a province of Mexico. It extends from longitude 89° to 94° 5'; its extreme southern point is in latitude 28° 56', and its northern latitude, 33°. The longest line that can be drawn in Louisiana is from the mouth of the Mississippi to the northwest angle on Sabine, 380 miles; the irregular form renders a correct estimate of its mean width difficult, but 120 miles is not far from accurate; area, 48,220 square miles.

There is not, perhaps, on earth, a continuous tract of equal extent, presenting a greater diversity than Louisiana. Within its limits are included all the varieties, from the most recent, and still periodically inundated alluvium, to hills approaching the magnitude of mountains; every quality of soil, from the most productive to the most sterile, and from unwooded plains to dense forests. All the southern part of this state is an alluvial tract of low champaign country, extending from Lake Borgne to Sabine river, and from the Gulf of Mexico to Baton Rouge and Red River,—about 250 miles long, and from seventy to 140 wide. This extensive tract is intersected by numerous rivers, bays, creeks, and lakes, dividing the country into a great number of islands. The country about the Balize is one continued swamp, destitute of trees, and covered with a species of coarse reeds, from four to five feet high; and nothing can be more dreary than the prospect from a ship's mast, while passing this immense waste. A large extent of coun-

try in this state is annually overflowed by the Mississippi. According to Mr. Darby, the average width of overflowed lands above Red River, from latitude 31° to 33° north, may be assumed at twenty miles; equal to 2,770 square miles. Below latitude 31° to the efflux of the Lafourche, about eighty miles in extent, the inundation is about forty miles in width; equal to 3,200 square miles. All the country below the efflux of the Lafourche is liable to be inundated, equal to 2,370 square miles more. From this calculation it appears that 8,340 square miles are liable to be inundated by the overflowing of the Mississippi; and if to this be added 2,550 square miles for the inundated lands on Red River, the whole surface of the state liable to inundation will amount to 10,890 square miles. Of this extent, however, not one half is actually covered annually with water. The immediate banks of the streams are seldom, and many of them never inundated, and they afford strips of rich arable land, from a mile to a mile and a half wide.

Embankments are erected on the margin of the Mississippi, called levees, to prevent the water from overflowing the plantations during the periodical floods. On the east side of the Mississippi, the embankment commences above 125 miles above New Orleans, and extends down the river to Fort St. Philip. On the west shore, it commences at the Atchafalaya, 239 miles above New Orleans. The levee is commonly about five feet high, and twelve feet in diameter at the base, with sufficient width at the top for a foot path; but at points where the current acts with greater force, it is sometimes fifteen feet high, and thirty feet at the base. As there is no stone to be had, the only material used is a soft clay. A crevasse, is a breach formed in the levee by the waters of the river in time of inundation. "A crevasse," says Mr. Braekenridge, "rushes from the river with indescribable impetuosity, and a noise like the roaring of a cataract, boiling and foaming, and tearing every thing before it." When a crevasse occurs, the inhabitants for miles above and below instantly abandon every employment, and hasten to the spot, when every exertion is made by day and night to stop the breach; their efforts are sometimes successful, but more frequently the hostile element is suffered to take its course, and the consequences are the destruction of the crop and the buildings; sometimes the land itself is much injured, the current carrying away the soil, or leaving numerous logs and trees which must be destroyed before it can again be cultivated.

From its southern latitude, it might seem reasonable to expect in Louisiana a very warm climate; and this has been reckoned upon to a greater extent

than experience justifies. The winters are in fact more severe, and the mean temperature lower than in higher latitudes by 2° on the Atlantic. In reality, as far as vegetation can decide the question, the seasons may be considered milder at Charleston, South Carolina, latitude 32° 42', than at New Orleans in latitude 30°."

Sugar and rice are the staples of the state generally, below latitude 30°, and cotton above that line. The latter is cultivated in every section of the country, and sugar, partially, to near the northern boundary; but avidity of gain, in some instances, has instigated to an unprofitable struggle with the laws of nature. The whole produce of sugar in Louisiana, in the year 1828, was stated at 88,878 hogsheads of 1,000 pounds each; and the capital invested in sugar estates was estimated at 45,000,000 dollars; the number of sugar plantations, in 1827, being about 700. In fruits Louisiana is abundant; amongst those successfully cultivated may be mentioned, the apple in the northern parts; the peach, and the fig, of several species, over the whole state; the orange nearly commensurate with sugar cane; the pome-

granate over the state, wherever attempted. Garden vegetables generally seem to have no assignable limit on a soil so varied, and in a climate so near the tropics. It may seem incredible that horticulture should be neglected in Louisiana, but such is the fact; and a fact the more unaccountable, as some individual gardens would seem irresistibly alluring to imitation.

In April, 1831, the rail-road from New Orleans to Lake Ponchartrain was opened. It is four miles and a half long, perfectly straight, and its ascent and descent only sixteen inches. The company are constructing an artificial harbour and breakwater in the lake, at the end of the rail-road. These works have caused a great rise in the value of property in the vicinity.

The Roman Catholics are the most numerous religious denomination in this state, which is divided into upwards of 20 ecclesiastical parishes, most of which are provided with priests. The Baptists have 1 association, 28 churches, 14 ministers, and 1,021 communicants; the Methodists, 6 preachers, and 1,573 members; the Presbyterians, 3 churches, 4 ministers, 1 licentiate, and 200 communicants; the Episcopalians, 3 ministers.

TABLE OF THE PARISHES AND SEATS OF JUSTICE.

EASTERN DISTRICT.				
Parishes.	Population.	Seats of Justice.	Distance.	
			N. O.*	W.†
Ascension, s. e. m.	5,400	Donaldson	75	1278
Assumption, s. e. m.	5,670	Assumption, C. H.	90	1293
Baton Rouge, East, m.	6,717	Concordia		
Baton Rouge, West, m.	3,092	Baton Rouge	117	1237
Concordia, n. e.	4,662			
Feliciana, East, e. m.	8,247	Jackson	158	1193
Feliciana, West, e. m.	8,629	St. Francisville	149	1205
Iberville, s. e. m.	7,050	Iberville	98	1256
Jefferson, s. e.	6,846	Coquille	202	1149
Lafourche Interior, s.	5,500	Thibadeauxville	108	1311
Orleans, s. e.	3,793	NEW ORLEANS		
New Orleans, city and suburbs	46,310			1203
Plaquemines, s. e.	4,489	Fort Jackson	75	1279
Point Coupee, m.	5,936	Point Coupee	154	1210
St. Bernard, s. e. m.	3,356			
St. Charles, s. e. m.	5,107			
St. Helena, e. m.	4,027	St. Helena	98	1212
St. James, s. e. m.	7,672	Bringier's	60	1262
St. John Baptist, s. e. m.	5,700	Bonnet Carré	36	1241
St. Tammany, e.	2,864	Covington	44	1159
Terre Bonne, s.	2,121	Williamsburgh		
Washington, e.	2,286	Franklinton		1162
Total	155,318, of whom 80,421 are slaves.			
WESTERN DISTRICT.				
Avoyelles, m.	3,488	Marksville	240	1247
Catahoula, n. m.	2,576	Harrisonburgh	251	1186
Claiborne	1,764	Russellville	441	1274
Lafayette, s.	5,606	Vermillionville	192	1351
Natchitoches, n. w.	7,926	Natchitoches	354	1328
Rapides, m.	7,559	Alexandria	272	1246
St. Landry, s. w.	12,552	Opelousas	192	1326
St. Martin's, s.	7,204	St. Martinsville	176	1366
St. Mary's, s.	6,442	Franklin	141	1344
Washita, n.	5,140	Monroe	323	1258
Total	60,257, of whom 29,210 are slaves.			

* From New Orleans.

† From Washington.

	Population.	Slaves.
Eastern District	155,318	80,421
Western District	60,257	29,210
Total of Louisiana	215,575	109,631

New Orleans, the capital, is regularly laid out on the left bank of the Mississippi, 104 miles from its mouth by the course of the river, and about ninety in a direct line. The streets are generally forty feet wide, and cross each other at right angles. On the streets near the river the houses are principally of brick, but in the back part of the town of wood. New Orleans is admirably situated for trade, being near the mouth of a river whose branches extend for thousands of miles in opposite directions, and open communications with the whole valley of the Mississippi. It is already one of the greatest emporiums of commerce in America, and the introduction of steam navigation on the Mississippi daily adds to its importance. The population has increased rapidly. In 1802, it was estimated at 10,000; in 1810, it was 17,242; in 1820, 27,146; and in 1830, 46,310.

Besides the navigation of the Mississippi, New Orleans has a convenient inland communication with Alabama, &c., by Lake Pontchartrain, to which there is a bayou and canal extending from a basin in the rear of the city, navigable for sloops and schooners.

Baton Rouge is situated on the left bank of the Mississippi, 138 miles above New Orleans, on the first considerable natural elevated bank which reaches that river above its mouth. This town contains about seventy houses, and 350 inhabitants. St. Francisville stands on an elevated bank near the mouth of Bayou Sara, and about one fourth of a mile from the Mississippi, 170 miles above New Orleans. It is a thriving little village, and the mart of the adjacent country. Natchitoches, the largest town west of the Mississippi, is on Red River, 200 miles above its junction with the Mississippi. The French established it as a military post in 1717, and about one third of its present inhabitants are of French origin. The population in 1818 was estimated at more than 600, exclusive of the garrison. Alexandria is a new and flourishing settlement on Red River, 120 miles from its mouth, and eighty miles below Natchitoches. Madisonville is on the north side of Lake Pontchartrain, twenty-seven miles north of New Orleans.

Of the several publications written of late on Louisiana, that of Judge Brackenridge is among the best and most ample. The late Historical Tract of the Abbe Marbois, on the purchase of Louisiana, deserves also close perusal. The American translator has added to the value of the original work.

CHAPTER VI.

THE TERRITORIES.—ARKANSAS—FLORIDA—MICHIGAN—CHIPPEWAYAN DESERT—OREGON.

ARKANSAS.

THIS extensive territory is bounded by the state of Missouri on the north; the Mississippi River on the east; Louisiana on the south; and Texas and the western territories of the United States on the west. It lies between longitude 90° and 100°, and latitude 32° 40' and 36° 30'. Greatest length from the Mississippi, 550 miles; mean breadth, 220; area, 121,340 square miles. It was erected into a territory in the year 1819.

Arkansas is naturally divided into three sections; the eastern or alluvial, towards the Mississippi; the central or mountainous, broken by the Ozark system; and the western or prairie. Proceeding westward from the Mississippi, an unbroken plain, covered with a dense forest, is succeeded by a very gradual ascent, partially forest and partially prairie, rising into hills of increasing elevation towards the west. A distinct chain of mountains rises in Missouri, and stretching south west over Arkansas, terminates in Texas, towards the Rio del Norte. The western, interior, and prairie section of Arkansas, as extensive as both the preceding, if not more so, is properly the commencement of that ocean of grass which spreads from the forests of the Mississippi to the summits of the Chippewayan mountains. From these grassy plains issue those numerous confluent which form the great volume of the Arkansas River. The Canadian, a considerable stream formed by three branches, unites with the Arkansas proper at the western foot of the Ozark mountains, and these together form the second largest constituent branch of the Mississippi. Breaking through the mountains, the Arkansas rolls towards the Mississippi, but in a course of 300 miles receives no farther accession beyond the size of a large creek. The general features of this extensive region are defectively explored. The Ozark tract is supposed to be prolific in mineral treasures; in fact the lower lead mines of Missouri, at and around Potosi, belong to this region. Muriate of soda (common salt) so much abounds in the western plains, as to render unfit for use the waters of Arkansas.

The Methodists in this territory have 7 preachers and 983 members; the Baptists, 1 association, 8 churches, 2 ministers, and 88 communicants; the Roman Catholics, several priests; the Presbyterians, 3 or 4 ministers; and the Episcopalians, 1 minister.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population.	County Towns.	Distance.	
			L. R.*	W.†
Arkansas, E.	1,423	Arkansas	114	1064
Chicot, S. E.	1,165	Villemont	184	1134
Clark, E. M.	1,369	Clark, C. H.	87	1155
Conway, E. M.	982	Harrisburgh	40	1108
Crawford, M.	2,440	Crawford, C. H.	136	1204
Crittenden, N. E.	1,272	Greenock	168	936
Hempstead, S.	2,507	Hempstead, C. H.	130	1198
Hot or Warm Spring, M.	458	Warm Spring	60	1128
Independence, N.	2,032	Batesville	102	1044
Izard, N.	1,266	Izard, C. H.	172	1114
Jackson	333	Litchfield		
Jefferson	772	Lafayette, C. H.	182	1250
Lafayette, S.	748	Jackson	152	994
Lawrence, N. E.	2,806	Miller, C. H.	228	1206
Miller, S. W.	358	Jacob's Staff	84	1034
Monroe	461	Helena	124	1074
Phillips, E.	1,132	Scotia	81	1149
Pope	1,483	LITTLE ROCK		1069
Pulaski, M.	2,395	Franklin		
St. Francis	1,505	Paraclista	168	1236
Sevier	636	Corea Fabre		
Union	640	Fayetteville	217	1285
Washington	2,181			
Total	30,383, of whom 4,578 are slaves.			

Little Rock, the seat of government of the territory, is situated on the south side of the Arkansas, in latitude $34^{\circ} 44'$ north, and longitude 15° west of Washington. Cadron is situated on the north bank of the Arkansas, thirty-five miles above Little Rock. The post or town of Arkansas, is on Arkansas River, about thirty-five miles from its mouth in a straight line, but about sixty-five miles by the course of the river, which is remarkable for its numerous windings; in consequence of which, boats generally proceed to the Mississippi by the White River, which communicates with the Arkansas by what is denominated the Cut-off, a deep though winding bayou. It is one of the most ancient settlements west of the Mississippi, having been established by the French before the beginning of the last century. Hopefield is a settlement on the Mississippi, nearly opposite Memphis in the state of Tennessee. Helena, the county town of Phillips, is a thriving village, also on the Mississippi. Batesville, the seat of justice of Independence County, is on White River, and carries on a considerable trade in cotton and furs. Here is situated the land office for the northern district of the territory.

FLORIDA.

This territory is peninsular, having the Atlantic on the east, the Gulf of Florida on the south, and the Gulf of Mexico on the west; the states of Alabama and Georgia form the northern boundary. This is the most southern section of the union, ex-

* From Little Rock.

tending from latitude $24^{\circ} 40'$ to 31° ; its extremes of longitude are $80^{\circ} 25'$ and $87^{\circ} 20'$. Following a curved line along the peninsula, from Florida Point, and continuing to Perdido River, at north latitude 31° , the length of Florida is about 600 miles; mean breadth, 90; and area, 54,000 square miles.

Embracing six degrees of latitude, a considerable difference of seasons must be experienced in Florida; but from the general uniformity of surface, and from being enclosed on three sides by the sea, the transitions of temperature are seldom very rapid or violent. Florida is naturally divided into two very different zones by the twenty-eighth degree of latitude: above it, the surface of the country is more broken, better timbered, and the soil of a superior quality; below it, the land is in great part marshy, flat, and devoid of timber, the true palm-tree section of the United States. The thermometer in summer usually stands between eighty-four and eighty-eight degrees of Fahrenheit in the shade; and in July and August frequently rises to ninety-four degrees. The sun is scorching hot at noon. In winter it very rarely freezes, nor is the cold ever so severe as to injure the China orange. From the end of September to the end of June, "there is not," says Volney, "perhaps, a finer climate in the world."

Florida abounds in vegetable productions of great variety, and of luxuriant growth. It is remarkable for the majestic appearance of its towering forest trees, and the brilliant colours of its flowering shrubs. Many rich fruits, particularly limes, prunes, peaches,

† From Washington.

grapes, and figs, grow wild in the forests. St. John's River, and some of the lakes, are bordered with orange groves; and olives are cultivated with success. Some of the most important productions to which the

country is well adapted, are sugar, coffee, cotton, rice indigo, tobacco, vines, olives, oranges, and various other tropical fruits. Cultivation has been extended only to some very small tracts.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.		Population.	County Towns.		Distance.	
			T.*	W.†		
West Florida.	Escambia, N. W.	3,386	Pensacola	242	1050	
	Jackson	6,092	Marianna	77	927	
	Walton, w.		Alaqua	161	1011	
	Washington, M.		Holmes' Valley	121	971	
Middle Florida.	Gadsden, N. M.	4,894	Quincy	23	873	
	Hamilton, N. M.	553	Miccotown	29	925	
	Jefferson, N. M.	3,312	Monticello			
	Leon, N. M.	6,493	TALLAHASSEE			896
	East Florida.	Madison	525	Hickstown	178	875
Alachua, M.		2,204	Dell's			
Duval, N. E.		1,970	Jacksonville	252			801
S. Florida.		Mosquito	733	Timoka	313	776
		Nassau, N. E.	1,511	Fernandina		
	St. John's, E.	2,535	St. Augustine	292			841
Total		517	Key West			
Total		34,723, of whom 15,510 are slaves.				

Tallahassee, the capital, was founded in 1824, between the rivers Oeklockonnee and St. Mark's, and twenty-three miles north of the Gulf of Mexico, in latitude $30^{\circ} 20'$, longitude $84^{\circ} 8'$. It was endowed with the proceeds of the lots of which the town is composed, to be invested in public buildings, and it is rising into importance with the settlement of the country. St. Augustine is a sea-port on the eastern coast, in latitude $29^{\circ} 51'$. It is regularly laid out, the streets intersecting each other at right angles. The houses are generally two stories high, and built of a peculiar kind of stone, a concretion of shells found near the sea shore. The situation is pleasant, fresh water abundant, the atmosphere dry and healthful. Invalids frequently resort thither for benefit. The soil in the vicinity is generally sandy, yet it produces oranges, corn, and esculent plants, in great perfection. The harbour is good, but the bar at its mouth has only ten feet water; the anchorage outside the bar is also good. At St. Augustine is a strong fort, built by the Spaniards, capable of carrying sixty cannon, and extensive barracks, a court-house, and two stone churches, catholic and presbyterian. St. Augustine is estimated to contain a population of 1,400 souls. Pensacola is a sea port of the Gulf of Mexico, on the bay of the same name, nine miles from the sea. It stands on a dry sandy plain, elevated eighteen or

twenty feet above the level of the water. The population amounts to about 2,000. It has a catholic church, and a navy-yard is about to be established by the United States in the vicinity.

MICHIGAN.

At the opposite extremity of the republic is another peninsular territory,—Michigan; not indeed rendered peninsular by the ocean, but by the fresh-water seas which divide the United States from the British provinces. This territory is bounded on the north by the Straits of Michilimackinac, on the northeast by Lake Huron, on the east by the St. Clair River, Lake St. Clair, Detroit River, and Lake Erie, on the south by the states of Ohio and Indiana, and on the west by Lake Michigan. It extends from longitude 82° to 86° , and latitude 35° to $45^{\circ} 20'$, having an area of 34,000 square miles.†

The peninsula of Michigan is composed chiefly of tableland, resting upon a bed of limestone and argillaceous sandstone. The interior, towards the sources of the rivers, is generally level and interspersed with lakes and morasses. An inclined plain, about twenty miles in width, skirts the peninsula on the east, north, and west sides. The rivers towards their sources have a sluggish current; when they

* From Tallahassee.

† From Washington.

‡ The preceding is that tongue of land which stretches northward from Indiana and Ohio, and is particularly designated the Territory of Michigan; but for temporary purposes, the United States government has connected with the peninsula an immense region, improperly called the Northwest Territory, towards the

sources of the Mississippi, and embraced within the following boundaries:—area, 140,000 square miles, equal to 89,600,000 acres, to which if we add the peninsular part, we have 174,000 square miles, or 111,360,000 acres. From the northeast angle of the state of Illinois to the northwest angle of Trans-Michigan, the territory is 650 miles long. The breadth is very irregular, but averages about 200 miles.

approach the declivity they become more rapid, but generally become sluggish again a few miles above their mouths. In the interior, particularly towards the northwest, there are extensive prairies; and marshes in many places border the mouths of the rivers; but more than seven-eighths of the whole peninsula is covered with a dense forest. The surface of the country along the eastern shore of Lake Michigan consists of sand-hills, sometimes covered with stunted trees and a scanty vegetation, but generally bare, and thrown by the wind into innumerable fantastic forms. This tract has been gained from the lake; and the land is still encroaching upon the water, every storm throwing up new quantities of sand. A large part of the soil is fertile and well adapted to the purposes of agriculture. The principal settlements are in the southeast; smaller settlements are at Michilimackinac in the north, and at Green Bay, west of the lake. But a small portion of the land has yet been purchased.

The climate is healthy, and usually, though probably fallaciously, accounted more mild than in similar parallels on the Atlantic.

The forest trees are of great variety. The wild rice, or wild oats, is a valuable natural production, covering the marshes near the margins of the lakes and rivers. The soil is well adapted to wheat, rye, oats, barley, flax, hemp, garden vegetables, and grasses. No part of the United States is more abundantly supplied with fish, aquatic fowls, and wild game. The fish are of various kinds, but chiefly white fish and salmon-trout, both of exquisite flavour. The trout weigh from ten to seventy pounds.

This territory is favourably situated for commerce, being almost surrounded by navigable waters, which are expected before long to be connected with the Mississippi on one hand, and the Hudson on the other. The vessels that navigate the lake usually carry from ten to sixty tons. Detroit and Michilimackinac are ports of entry.

POPULATION OF THE COUNTIES AND COUNTY TOWNS.

Counties.	Population.	County Towns.	Distance.	
			D.*	W.†
Berrien	323	Niles	179	651
Cass	928	Edwardsburgh	169	643
Jackson		Jacksonopolis	88	563
Lenawee, s.	1,491	Tecumseh	63	512
Macomb, s. E.	2,414	Mount Clemens	26	552
Michilimackinac, n.	877	Mackinac	321	847
Monroe, s. E.	3,187	Monroe	36	490
Oakland, s. E. M.	4,910	Pontiac	26	552
St. Clair, s.	1,115	St. Clair	59	585
St. Joseph	1,313	White Pigeon Prairie		
Van Buren	5			
Washtenaw, s. M.	4,042	Ann Arbor	42	535
Wayne, s. E.	4,565	Detroit		526
Detroit, city	2,222			
COUNTIES WEST OF LAKE MICHIGAN.				
Brown	964	Menomonie		
Chippewa	625	Sault de St. Marie	356	882
Crawford	692	Prairie du Chien	598	1060
Iowa	1,589	Helena		
Total	31,260, of whom 27 are slaves.			

Detroit, the capital of the territory, is on Detroit river, nine miles from lake St. Clair. It was settled as early as 1683, by the French from Canada, for the purposes of the fur trade. At present its trade is chiefly with Ohio and New York, and with the military posts on the upper lakes. In 1818, the amount of shipping was 849 tons. The fort is a regular work, with parapets and bastions, and surrounded by palisadoes, a deep ditch, and a glacis. In 1820, the population was 1422. Michilimackinac, commonly called Mackinaw, is on an island of the same name, in the straits of Michilimackinac. The

island is about nine miles in circumference, and the village is on the southeast side of it, on a small cove, which is surrounded with a steep cliff 150 feet high: on the top of the cliff stands the fort. Behind the fort, at the distance of half a mile, is another summit, 150 feet higher, and 300 feet above the level of the lake, on which Fort Holmes is erected; from this spot there is an extensive prospect over Lakes Huron and Michigan. During the summer, Mackinaw is the resort of many Indians and fur traders. Fort Gratiot is a military post on St. Clair River, and defends the entrance into Lake Huron. The Sault de St. Marie

* From Detroit.

† From Washington.

is of importance as a military and trading post, being at the head of ship navigation on the great lakes, and the grand thoroughfare of Indian communication for the upper countries, as far as the arctic circle, all the fur trade of the northwest being compelled to pass through it. The government of the United States resolved to occupy this post, and in June, 1820, obtained from the Chippewayan Indians the cession of a tract of land four miles square, commencing at the Sault, and extending two miles up, and the same distance down, with a depth of four miles.

CHIPPEWAYAN DESERT—OREGON.

The entire extent of the North American republic is far from being comprehended in the states and territories which have now been described. In addition to these is the wide expanse of the Chippewayan Desert, to the westward of Missouri, Illinois, and Michigan; and the district of Oregon, lying between the Chippewayan Mountains and the Pacific Ocean. Although subject to the dominion of the United States, and constituting a portion of its territory, its government in these regions has rather a nominal than a real existence. It does not appear to have any magisterial representation, or any judicial officer; nor have the scattered inhabitants of this waste a voice in national affairs or a civil existence of any degree. In full possession of personal liberty, they roam or rest in these almost boundless regions, while here and there a military station is the only signal of authority, and preventive of wrong. As may be supposed, the tenants of the wild are comparatively few, and of a daring and lawless character. Some are allured by the profits to be derived from the pursuit of the chase; and others by the congeniality of such a life with a reckless and adventurous spirit.

The whole region possessed by the United States, westward of the Chippewayan range, is comprehended under the name of Oregon. The waters that rise on the western declivities of these mountains, flow into the Columbia, the Multnomah, and the Lake Bueneventura. Most of the elevated summits of the mountains are above the limits of perpetual congelation. Beyond the mountains the country descends by regular belts in the form of immense terraces, or descending plains, disposed regularly, the one below the other. Beyond the first plain, and between the Rocky Mountains and the Pacific, is another extensive and high chain of mountains, in which are the great falls of the Columbia. Still west of these, and running parallel with the coast, and at the distance of 150 miles, is the third and last chain. The peaks of all these chains are covered with perpetual snow. The highest peaks have been named Mount

Baker, Mount Regnier, Mount St. Helens, Mount Hood, and Mount Jefferson. The only rivers explored in this region are the Columbia and its branches.

Being sheltered on the north by protecting ridges of mountains, and the breezes from the west being softened by coming over an immense extent of sea, the climate is as mild as it is in the country east of these mountains, four or five degrees to the southward. Langsdorf describes the country on the southern limit as the country of oranges and figs, of verdure, health, and fertility. We scarcely remember to have seen more sober pictures of a desirable country than those drawn by him of that region; they correspond with the accounts of Lewis and Clark, as well as those of other travellers, who have explored it. When the intelligent and intrepid adventurers we have just named left the country, in March, and in the latitude of Montreal, the prairies were in blossom, and the forwardness of the season seems to have corresponded with that of North Carolina at the same time. The winters are rainy, and some parts of them severe.

This country was discovered by the Spaniards. In 1791, Captain Gray, of the ship *Columbia*, of Boston, entered the river, and from his ship it received its name. It was occasionally entered by navigators afterwards. In 1805, Lewis and Clark descended this river from the mountains to the Pacific, and spent the winter on its shore. They returned by the same river to the mountains; and most of the exact information that we have respecting the country, is derived from them. For some years a settlement of fur traders, called Astoria, (after John Jacob Astor, a merchant of New York,) has existed here; and the chief intercourse of this place is with China. In the neighbourhood of Astoria is a military post, called Fort Clatsop, or Fort George. The question of permanently settling this delightful country has been more than once debated in congress. Were such settlements authorized, and rendered secure by the requisite military establishments, there can be no doubt but it would receive large accessions of emigrants. The number of Indians of the different tribes is estimated at 140,000.

In the description of the different states, we have, for the sake of compression, omitted the particulars of the rivers and lakes, and some other portions of natural geography, of which a general account has already appeared in the first part of this volume. We trust that satisfactory information has been conveyed, alike interesting to those who delight to make the field of nature their study, and important to those who contemplate a removal to this prosperous republic of the western hemisphere.

BOOK VI.

METEOROLOGY.

[THIS article was announced in the American Editor's preface to this work, but not being at hand when the general meteorological matter was struck off, it necessarily comes in towards the close of this volume.]

It may be proper to state, that the leading doctrines of the following essay were first published in a work on natural philosophy, entitled, "A New Theory of Terrestrial Magnetism," in 1833.* In that work, the author endeavoured to prove that caloric is the most subtle and refined exhibition of matter with which we are acquainted, but that its properties and effects are as open to investigation as those of other matter; that it possesses the following properties,—extension, or the occupation of space; attraction for ponderable matter, by which it combines intimately with it, and becomes latent; repulsion of its own particles, to which is owing the power of steam, and the elasticity of all other matter; mobility, and divisibility; these are the fundamental properties of caloric, which demonstrate its materiality. He endeavoured to demonstrate the fundamental identity of *caloric* with all the forms of electricity; and that "this *universally pervading element* is the cause of all the powers and attractions of ponderable matter." In his paper on molecular attractions, he has shown, that the affinity of caloric for ponderable matter is so strong and universal, that they cannot be entirely separated,—that heat surrounds, and is chemically combined, in greater or less proportion, with the atoms of all bodies in a latent state,—that in solids it binds the atoms together,—and that it draws the atoms of fluids together less strongly, giving to their drops a globular form; in short, that caloric is the combining force, by which the atoms of matter are held together. He has shown that there is "more heat between the atoms of fluids than of solids, and more between the atoms of gases than of fluids. He also maintains, that the small cohesion of fluids and gases, is owing to the large amount of caloric between their molecules; when thus accumulated, its repulsion of its own particles exceeds its attraction for ponderable

matter; but that in solids, its attraction for ponderable matter exceeds its repulsion of its own particles,—which explains how it is, that the same agent is the cause of both attraction and repulsion throughout nature. The author next proves, that caloric is the cause of capillary attraction, a phenomenon hitherto unexplained. He maintains that the caloric of fluids has an affinity for porous solids and capillary tubes, because the fluids are plus, and the solids minus,—and that *hot* water penetrates porous solids or capillary tubes more rapidly than cold water; which demonstrates that heat is the moving force in capillary attraction. He attributes the greatly increased circulation of sap in trees and plants, to the power of heat on the approach of spring. He also explains the production of cold on dissolving common salt, snow, muriate of ammonia, muriate of lime, and many other salts, from their attraction for caloric, a large quantity of which is necessary to convert them into fluids, when it becomes latent, which causes "the coldness."

Dr. Metcalfe further maintains, that caloric is the cause of chemical affinities, and that its agency is discoverable in all the decompositions and recombinations which take place throughout nature—that this position is clearly demonstrated by the greater amount of chemical action which is constantly going on in the tropical than in the polar regions, and during summer than winter; and by the fact, that in the regions of perpetual frost, there is little or no chemical action: hence, that meat may be preserved for any length of time fresh, and metallic utensils from rusting. He considers it a universal law, that every process of oxidation, or combustion, is promoted by moderate heat, and arrested by cold—and that without heat, or electricity, there would be no combination of oxygen with other elements. He objects to the general doctrine of the schools, that cohesive and chemical attractions are owing to the agency of specifically distinct powers, and adduces the opinion of Sir Isaac Newton, that "the atoms of all matter are endowed with one and the same power of attraction and repulsion, varying according to a certain law of the distances."

Dr. Metcalfe conceives that elective or chemical

affinity is owing to the stronger attraction of one element for caloric than another, by which the atoms of different elements are more powerfully drawn together, than the atoms of the same element—from which it follows, that cohesive and chemical attractions are owing merely to different degrees of the same power. He repudiates the idea of innate powers of attraction in the atoms of ponderable matter, maintaining, that there must be some imponderable intermedium, by which they attract and repel each other—and as caloric is known to surround the atoms of all matter, and to have an attraction for them, it must be the combining force.

Embracing the doctrine of Sir Isaac Newton, that the action of large masses of matter is resolvable into the action of their minutest particles or atoms, and that the atoms of all matter are endowed with one and the same power of motion, the author maintains that caloric is the bond of union among the heavenly bodies; that the sum of all the atomic attractions of matter constitutes the attraction of gravitation; that the attraction between atoms is in proportion to their size, and inversely as the distance; and that the same law is predicable of the largest bodies; that the force of cohesive attraction exceeds, many millions of times, that of gravitation, because the atoms of matter are many million times nearer together. He maintains that those bodies have the strongest attraction for caloric, which contain the least of it, such as gold, mercury, and other dense metals; that mountains contain less caloric than aqueous vapour, in proportion to their amount of matter, therefore attract its caloric, by which means the vapour is collected around them, and condensed into clouds, rain, &c.; that all matter is collected together by the attraction of caloric for ponderable matter. He quotes the opinion of Newton, "that there must be some connecting medium between the heavenly bodies, by which they are retained in their orbits, which he termed ether;" and he adduces the astronomical computation, that the sun is more than 500 times larger than all the planets and comets that revolve around him; that this immense body is continually emitting streams of light and heat, which vivify the whole planetary system with an ever active flame; in fine, that all the discoveries of science lead to the conclusion, that every part of the universe is governed by the same laws, from the minutest atoms to the largest bodies.

The second part of Dr. Metcalfe's work is devoted to the theory of Terrestrial Magnetism, which he has connected with the subject of Climatology. He commences by laying down the following positions as the basis of his theory

1. That there is an unequal distribution of temperature in the tropical and polar latitudes.

2. That the unequal distribution of land and water over the globe, causes unequal temperatures in given latitudes.

3. That a line passing round the globe from east to west, which divides its temperature into two equal portions, is the magnetic equator.

4. That the centres of greatest cold are the centres of magnetic attraction; and that the force of attraction is proportional to the intensity of cold.

5. That the prevalence of land in the tropical latitudes produces a general elevation of temperature; while its predominance in the *higher* latitudes, causes a corresponding *reduction* of temperature.

6. That the magnetic needle is apparently operated on by two forces—one vertical, and the other horizontal; and that the horizontal is exclusively the *directive force*.

7. That the vertical force, which causes the needle to dip, is probably equal on every part of the globe, when the horizontal force is quiescent.

8. That at the magnetic equator the dipping needle is horizontal—and that it dips gradually more and more, until we approach the magnetic poles, where it becomes vertical.

9. That the horizontal intensity decreases, as the dip increases, until we approach the regions of lowest mean temperature, where it vanishes, and the compass needle will not traverse, but remains in whatever position it is placed.

10. That there is more than three times as much land in Arctic America, as in Arctic Asia and Europe, attended by a corresponding reduction of temperature, and increase of magnetic intensity.

11. That there are *at least* two magnetic poles in each hemisphere, of unequal intensities, and at unequal distances from the geographical poles.

12. That these poles are not stationary, but shift from east to west, and from west to east—also, from north to south, and from south to north.

13. That the unequal distribution of caloric in the tropical and polar latitudes, is the cause of magnetic polarity.

14. That the unequal distribution of land and water causes an unequal distribution of temperature in given latitudes, is most clearly exemplified in the different zones of the American continent. Between the equator and the fortieth degree of south latitude, there is more than double the quantity of land than there is between the equator and the fortieth degree of north latitude, which causes an increase of tem-

perature of several degrees in the southern hemisphere. Besides, there is more than six times as much land in North America between latitude 40° and 80° , as there is between latitude 40° and the equator, which is a powerful additional cause of diminished temperature in the northern portion of the western continent.

From the successive observations of Capt. Scoresby, Sir Edward Parry, Sir John Franklin, Capt. Ross, and other navigators, the author has shown, that the coldest part of the northern hemisphere, is about 70° north latitude, and 98° west longitude from Greenwich; and that the compass needle is directed to that point over about 240 degrees of longitude; that there is another centre of magnetic influence in the northern part of Asia, in latitude $85^{\circ} 12'$ north, and $140^{\circ} 6'$ east longitude, according to the observations of M. Hansteen. There are likewise different magnetic poles, or centres of cold, in the southern hemisphere, situated at unequal distances from the geographical pole; one of them in S. Lat. $68^{\circ} 52'$, and $132^{\circ} 35'$ east longitude; the other, southwest of Terra del Fuego, in Lat. $78^{\circ} 16'$ and Long. $135^{\circ} 59'$ west from the meridian of Greenwich. The influence of these poles produce all the phenomena of magnetic variation. The author maintains, that if the whole earth were of uniform surface and elevation, its temperature would be the same in given latitudes; that the poles of the earth's axis would be the coldest points, and, consequently, that the needle would always point true north and south, and that there would be no variation of the compass. He maintains, that the unequal distribution of land and water, mountains and plains, produce all the variations of terrestrial temperature, in the same latitudes. He supposes there will be few philosophers hardy enough to contend, that the compass needle would traverse north and south, were the tropical and polar regions of the same temperature. The Doctor maintains, that whatever the cause of polar attraction may be, it must be a material agent, every where present on the globe; and that if caloric be the cause of all the other powers and movements of ponderable matter, it must be also the cause of polarity. But the facts which demonstrate the agency of caloric in terrestrial magnetism are, that all the variations of intensity, dip, and direction of the needle, obey the annual, monthly, and diurnal variations of temperature. It is impossible to present any thing like a fair view of the work in a brief summary, as it is greatly condensed, and cannot be fully understood without following the chain of facts and arguments throughout. The whole theory of magnetism is intimately connected with the identity of caloric and electricity

It will be obvious to the philosophical reader, that if the author's facts and reasonings are in accordance with the established laws and phenomena of nature, the *cause* of attractions, so long involved in obscurity, has been discovered,—and the hidden spring of that indwelling energy, which actuates and animates the whole system of nature, revealed. He has unfolded a new principle, which embraces and connects the whole circle of physics, and which must lead to the most important results, both in a practical and theoretical point of view. Disregarding the sneers of ignorance and prejudice, and deeply imbued with the love of truth, he has modestly, but freely, canvassed the opinions of his predecessors—and the whole of his speculations are remarkable for boldness and originality.

The object of the following essay, is to point out the agency of caloric in the phenomena of rain, thunder and lightning, dew, fog, Indian summer, winds, hurricanes, tornadoes, and hail-storms, together with the aurora borealis. The author endeavours, throughout, to prove the identity of caloric and electricity. On nearly all these branches of science, which have recently so much occupied the attention of philosophers in Europe, he has taken almost entirely new ground. It remains for future investigations to decide how far he has succeeded in his efforts to extend the boundaries of truth. His theories afford much to reflect upon, something to doubt upon, but nothing to condemn.

After tracing the operations of caloric in causing attractions generally, the author takes up the subject of atmospherical phenomena, as follows.

The attraction of caloric for water causes it to enter into and combine with its particles, by which it is carried into the atmosphere in the form of invisible vapour, which is charged plus with caloric, while the affinity of the same caloric for bodies that contain less of it draws the vapour towards them. Thus, mountains which contain a vast quantity of ponderable matter are minus, and attract neighbouring masses of vapour which are plus, abstract their heat, when they descend in showers of rain, snow, or hail, according to the temperature of the atmosphere. It has been proved by a long series of observations, that double the quantity of rain falls on Mount St. Bernard that falls at Geneva; and double the quantity falls at Geneva that falls at Paris. We are also informed by Mr. Jefferson, that it rains five days in the week on the warm spring mountain in Virginia, which is about 3000 feet above the level of the ocean.

It was observed by Dr. Franklin, that masses of

vapour in different states of electricity attracted each other far beyond what he called the striking distance. When cumuli of clouds are formed in the atmosphere, by parting with a portion of their heat to colder bodies, they are minus or negative in relation to all uncondensed or transparent vapour, which is plus, so that they become centres of attraction, drawing to them successive masses of invisible or transparent vapour, and abstracting their caloric, by which a perpetual condensation or nimbification is kept up, until they become aggregated into extensive masses, which sometimes resemble huge castles or vast rocky mountains suspended in the air. We witnessed in New York, on the evening of June 2, 1833, the most beautiful display of aerial condensation, that we remember ever to have seen. The wind was brisk from the south, and brought from the ocean successive masses of transparent vapour of a red brassy hue, which allowed the rays of the setting sun to pass partially through them, when on meeting with a colder upper current as they passed over the city, vivid streaks of lightning darted from them, and they were suddenly *condensed into black clouds*, which interrupted the solar rays, and were attended by rapid precipitations of rain. The showers intermitted and augmented several times, between the successive flashes of lightning; and during the intermissions, the atmospheric vapour assumed the same brassy colour as at first. It will be proved hereafter, that these remarkable condensations resulted simply from the giving out to a colder body of air in the form of lightning, that portion of caloric which is necessary to hold water in a state of vapour.

So decided is the attraction of caloric for ponderable matter, and its repulsion of its own particles, that it passes with great facility through the densest bodies, which are therefore called conductors, but with difficulty through those which are light, such as gases, furs, silks, woollens, rezins, &c. whose pores are filled with caloric.

In tracing the relations of caloric and atmospheric electricity, it becomes necessary to examine whether they are both derived from the same source, as well as the effects which they produce on common matter.

What then is the agent by which water is converted into atmospheric vapour? Is it caloric or electricity? It is time that all philosophers should agree in the answer to this question.

Dr. Dalton demonstrated by experiment, that caloric is the *only* cause of evaporation. He put a little water in a dry glass flask, with a thermometer in it, when he found that a *small* quantity of vapour was formed at 32° F. At 40°, the quantity of vapour was

increased; at 50°, it contained still more; while at 60°, the quantity was still further augmented. He also found, that when the temperature of the flask was suddenly reduced from 60 to 40 degrees, a portion of the vapour was converted into water, and that the quantity retaining the elastic form was precisely the same as when the temperature was originally at 40°. (*Meteorological Essays*.) Evaporation then goes on at all temperatures, increasing from 32°, or even from 0, up to 212°. When the flask becomes *full* of vapour, its pressure or elasticity prevents the further process of evaporation. When the atmosphere is in this condition, it is said to be saturated with vapour; and the smallest reduction of temperature causes precipitation. When the atmosphere is already full of aqueous vapour, it presents a mechanical impediment to the passage of more vapour through it, which enables us to comprehend why it is that a *cold* wind when *dry* promotes evaporation, better than a warm wind which is already saturated with aqueous vapour. In this last condition of the atmosphere, the slightest reduction of temperature causes a condensation of the transparent aqueous vapour into mist, clouds, rain, &c.; but when the atmosphere contains very little vapour, as when it comes from an extensive region of *dry land*, or during the cold winter months, in the interior of North America, a much greater reduction of temperature is requisite to produce precipitation, because such air is not saturated. If two masses of atmospheric air of equal volumes, one at 60° and the other at 80°, each saturated with transparent vapour, be mixed, condensation takes place, causing moisture or precipitation; and the air at 60°, has its temperature elevated by the evolution of the latent caloric of the vapour at 80°.

When the wind has prevailed for some time from the ocean over the land, loaded with transparent aqueous vapour, the latter is condensed on meeting with a colder current from the northern regions; and precipitation continues until the current from the ocean has deposited its vapour, or until it is driven back by the predominant force of the northern wind.

According to Dr. Dalton's experiments and calculations, the atmosphere which surrounds the earth is composed of several distinct aerial fluids or gases, which vary in density, height, &c., and exist in a state of mechanical mixture. They are oxygen, which he supposes to extend 38 miles in height; nitrogen, 54 miles; aqueous vapour, 50 miles; and carbonic acid gas, 10 miles. (*Meteorological Essays*.)

The above estimates can be considered only as approximations to the truth, as we have good reason

to believe, that there is very little aqueous vapour in the atmosphere, above the elevation of ten miles. At 32 degrees of Fahrenheit, the largest amount of aqueous vapour which can exist in the atmosphere, is about $\frac{1}{100}$ of its volume; at 60°, it is $\frac{1}{200}$ th, and at 93°, it is $\frac{1}{400}$ th. The transparency of the atmosphere is in proportion to its temperature. This explains why there are more clear days in the tropical than in the middle and higher latitudes; and why the atmosphere is transparent below the region of the clouds, even when the sky is overcast. While the average quantity of aqueous vapour in the atmosphere decreases from below upwards, and from the equator to the poles.

It is still the general opinion of philosophers, that the decrease of temperature as we ascend in the atmosphere, amounting to a degree for every 352 feet, is owing to its increased rarefaction from diminished pressure, and consequent increase of capacity for heat.

Is it not more probable, that the obstruction and accumulation of the sun's rays by the earth's surface, is the cause of the warmth of the lower atmosphere? The stratum of air in contact with the earth becomes heated, and rises, when the next stratum becomes heated and rises; and so on, until the whole atmosphere becomes warmed to a considerable height.

The passage of the solar rays through transparent media without heating them, has led unreflecting persons to doubt whether the sun's rays possessed any heating power, before combining with other matter. M. Pouillet concludes from some plausible experiments he made, that the solar rays which reach the surface of the earth in the course of a year, have sufficient power to melt a complete stratum of ice, about 46 feet in thickness. (*Elements de Physique, &c.*)

At the depth of from about 50 to 100 feet below the surface of the earth, the temperature is invariable—therefore, independent of the solar rays, and due to the constituent caloric of the globe.

It has been estimated by Sir I. Newton and others, that the pores of water occupy about 40 times the space of the ultimate atoms; which space is filled with caloric; while the atmosphere is 825 times lighter than water, which is also owing to the amount of caloric between its molecules. If a small portion of atmospheric air be suddenly condensed by means of a syringe, a sufficient quantity of heat is disengaged to set tinder on fire. If two dry sticks be rubbed together, they take fire. If granite, marble, or the densest metals, be compressed with great force, they become hot. The smith often kindles his furnace by hammering a piece of iron, until it is red hot, and applying it to his coals.

It is susceptible of demonstration, that all bodies

contain caloric in some inverse measure to their specific gravities. The most dense contain it minus, while the lightest contain it plus. It is in reality impossible to imagine any other cause of specific gravity than caloric. The most intense heat ever produced by artificial means, has been developed by the combustion of oxygen and hydrogen gases. The atmosphere is an immense balloon expanded by heat—yea, the solid earth owes its *volume* chiefly to this subtle fluid in a latent state.

An important fact, illustrating the identity of caloric and electricity, is, that during all combustions *electricity* is evolved. M. Pouillet ascertained by repeated experiments, that during the combustion of hydrogen, ether, alcohol, wax, fat, charcoal, and many other vegetable substances, a zone of air surrounding the flame was electrified plus, while the interior of the flame was electrified minus. His inference was, that during the combustion, the atmospheric oxygen gives out positive electricity, while the carbon and hydrogen of the combustible bodies give out negative electricity. M. Pouillet has also proved by direct experiment, "that the combination of oxygen with the materials of living plants is a constant source of electricity." We do not, however, agree with M. Pouillet, that electricity is thus generated *de novo*.—(*Ann. de Chim. et de Phys.* XXXV. 401.)

Moreover, if two pieces of the same body, of equal size, be submitted to different pressures, the one which experiences the greatest pressure is electrified plus, while the other is minus. According to the experiment of Beequerel, the *quantity* and intensity of electricity thus developed is proportional to the pressure.—(*Ann. de Chim. et de Phys.* XXII. 5.)

M. Avogadro has also discovered, that if two pieces of the same metal are plunged at different instants into an acid which oxydizes them, the piece first introduced will be positive and the second negative. (See *Ed. Phil. Journal*, vol. 9.) The above experiments show conclusively, that *electricity* pervades all bodies,—that it is disengaged from them by *pressure* and by chemical agency, like caloric,—in short, that they are one and inseparable. They also demonstrate that what has been called two electricities, is nothing more than the plus and minus state of the *same* fluid. Every thing is full of latent caloric, which is convertible into sensible heat or electricity, according to the mode of their development. If a piece of white sugar, or any other dry substance, be forcibly struck, or suddenly compressed, in the dark, electricity and light are disengaged.

It would seem obvious to the most superficial observer, that caloric is the cause of evaporation, inas-

much as the greatest amount of evaporation takes place in regions which receive most of the sun's heat. We may form some idea of the vast amount of caloric contained in atmospheric vapour, when we reflect, that a pound of vapour will raise the temperature of a pound of water nearly 1000 degrees;* that its bulk is increased about 1800 times in passing from a state of water to that of vapour; and that all the rivers of the earth are supplied by its precipitation.

What then becomes of all the caloric which must be given out during the condensation of this vapour? We know that thunder and lightning are most abundant in the tropical regions, and during hot, sultry weather, in the middle latitudes. Hence we infer, *that the caloric of vapour, when greatly accumulated, is given out rapidly, in the form of electricity, on approaching a colder mass of vapour which is negatively charged with caloric.*

Does it not involve a striking contradiction to say, that vapour is raised into the atmosphere by caloric, and that it is condensed by the evolution of another distinct fluid, called electricity? If so, whence originated the electricity? Are we to suppose with Dr. Thomson, "that when two currents of dry air are moving different ways the friction of the two surfaces may evolve electricity? or with M. Pouillet, that it is developed by chemical action, and by the growth of vegetation? Absurd as these hypotheses may appear, they forcibly illustrate the difficulty of accounting for its origin and existence, when considered as a distinct elementary fluid from caloric.

We are not authorized to predicate a primary distinction, until fully acquainted with all the different states and affections of caloric, under different circumstances; for example, in its combinations with different substances, in a solid, fluid, gaseous, or imponderable state—as with the matter of light—its diffusion, concentration, compression, &c.

Moreover, we are not philosophically warranted in assigning more causes than are sufficient to explain the phenomena. Now the expansion of fluids by caloric explains satisfactorily the process of evaporation;—and the passage of the same caloric out of the vapour is sufficient to account for its condensation: whether it pass out slowly and insensibly, or with rapid and explosive violence.

We know that condensation and precipitation of vapour often take place, when two currents of vapour of different temperatures unite, without any visible display of electricity. We also know that caloric is

given out during all aerial condensations. It is a matter of common observation, that the weather is more hot and sultry in summer during the formation of clouds, than when the air is clear; and that in winter, it becomes warmer during a fall of rain or snow, unless accompanied by a northern wind.

There is not a greater apparent difference between any of the forms of caloric and electricity, than between the electricity in the atmosphere and in an exhausted receiver. The explosion of gun-powder resembles an electric explosion much more nearly than it does the combustion of ordinary fuel. We often see the heavens filled with sheets of flame, produced by the evolution of caloric from atmospheric vapour.

The spark from steel resembles the electric spark, except that it will not pass through conductors: perhaps, because the ignited matter with which it is combined is less subtle.

In subtilty, the electric and galvanic sparks are equalled only by the solar rays. What can be more different than caloric in its free, and in its latent state? When we shall understand more thoroughly *how* caloric assumes so many different states and appearances, we may discover how it exhibits electrical phenomena.

Before caloric combines with, and expands water into atmospheric vapour, it is universally acknowledged to be sensible heat; after it enters into the water, and converts it into transparent invisible vapour, its state is changed; and, when greatly accumulated in this state, it exhibits *electrical phenomena*. To say, however, that its elementary nature is changed, would be as unphilosophical, as to contend, that the latent caloric of water is specifically different in its nature from the same caloric, when set at liberty by pouring water on calcined lime; or that it is distinct from the caloric which moves a steam engine by its expansion; or that the galvanic fluid is distinct from the electricity of a Leyden jar, because it moves with less velocity. But it is universally acknowledged, that galvanism and electricity are essentially the same fluid; and we shall show hereafter, that galvanism is developed by the combustion of metals in acids, alkalis, or atmospheric air.

Had philosophers attended more carefully to the great changes which take place in the states of caloric, produced by its various *modes* of combination with other matter in different forms, they would probably have been led to discover more clearly, if not the identity of caloric and electricity, *at least that they are inseparable, and that without caloric there could be no electricity.*

* Dr. Hare says, that there is twice the quantity of caloric "given out during a snow storm, than would be given out by an equal quantity of red hot powdered glass."

Sensible heat and electricity do not differ more than latent heat and free caloric; nor more than ice differs from water, or water from transparent aqueous vapour.

We know that a Leyden battery may be filled with the electric fluid drawn from a living man; and that a living man may be charged with the electric fluid until it runs over, producing palpable currents.

Yet there is no possible mode of conceiving how the system becomes charged with electricity, except from a decomposition of the atmosphere by the lungs in respiration: in other words, the animal heat derived from the atmosphere becomes animal electricity, when abstracted from the system by means of an electrical machine, and deflects the magnetic needle 90 degrees, according to the late experiments of Dr. Locke,—which proves, at least, that the heat and electricity of animals have one common origin, or that animal heat is convertible into electricity.

One of the most decisive proofs that caloric and electricity are convertible into each other is, that during all condensations of aerial vapour, whether into rain or snow, during winter or summer, caloric is given out in very large quantities. It is notorious among the vulgar, that the air is rendered hot and sultry, during summer, before showers, which is owing to the heat given out by the transparent vapour as it condenses into clouds, as before-stated; also, that the temperature is greatly moderated by a fall of rain or snow during winter. In the above examples we perceive, that the same fluid, which, when greatly accumulated in the atmosphere, and suddenly given out, causes lightning and thunder; under ordinary circumstances of condensation, is given out silently, producing no other sensible effect, than to raise the temperature.

We have observed a cold northeast wind to continue several days during the month of April, until an upper current from the ocean, loaded with aqueous vapour, gave out its caloric, when a general rain came on, and the temperature rose several degrees, before the wind prevailed from the southern points of the compass, on the surface of the earth—and that when the rain ceased, the temperature was again reduced.

Dr. Franklin was greatly puzzled to account for the origin of atmospheric electricity. At one time he supposed that it was produced in the ocean, by the friction of salt and water; but afterwards finding this hypothesis unsatisfactory, because he ascertained that clouds were negatively electrified, and that all bodies were more or less filled with electricity, he imagined that the electric stroke passed from the earth to the clouds, and not from the clouds to the earth:—an hypothesis still less tenable than his former one.

Mr. Daniell, in his late excellent work on Meteorology, observes, "that the interesting subject of atmospheric electricity has been almost totally neglected;" and "that at present, he had nothing to offer on this most important branch of physical science."

Dr. Thomson says, "that the formation of vapour seems to be connected with electricity, though in what way the vesicular form is induced by electricity we have no conception." It is indeed very difficult, if not impossible, to conceive *how and whence* the electricity originated, if it be not caloric. He adds further, "the formation of rain is still involved in impenetrable obscurity."

In the transactions of the British Association for 1832, it is observed, by Mr. Forbes, "that on the noble science of atmospheric electricity, almost every thing has yet to be done."

With due deference to the opinion of Dr. Thomson, the rationale of rain is very simple, if we admit that caloric and electricity are convertible into each other: Water is expanded by heat into transparent vapour—raised into the atmosphere, where it remains suspended, until it approaches the vicinity of a mountain, or a mass of vapour, at a lower temperature, when the attraction of caloric for those bodies which contain less of it, causes it to leave the transparent vapour, and it coalesces into mist, clouds, rain, snow, or hail. If the difference of temperature be great between the masses of meeting vapour, the equilibrium is restored suddenly by a violent explosion, in the form of the electric spark or lightning. During winter, the difference of temperature between different masses of vapour is usually small in the middle latitudes, so that the equilibrium is restored gradually and without explosion. During spring, and especially in April, when masses of warm and cold vapour frequently meet, light-showers are precipitated, by the sudden passage of caloric from one to the other—still without much thunder and lightning.

But in summer, when the atmosphere is saturated with transparent aqueous vapour, *which is full of caloric*, its approach to a mountain or a mass of vapour charged minus, is attended with rapid and sudden transitions of caloric from the plus to the minus body, causing terrific explosions of thunder and lightning.

An erroneous opinion has hitherto prevailed, that lightning is accumulated *in* the clouds, and that it darts from one cloud to another. Nothing could be more in opposition to all our knowledge of electricity than such a belief. How is it possible that electricity can accumulate in a conductor? The very question is idle. It is accumulated in transparent aqueous vapour, and thence often passes *through* the neighbouring

clouds, so as to present the appearance of originating in them, or of coming from them. It is doubtless, in many cases, attracted by the earth, by trees, buildings, ships, mountains, &c., and thus made to pass *through* such clouds as intervene, thus leading to the idea, that it proceeds *from* the clouds as starting points; while it is only an appearance, which a philosophical examination proves to be an illusion.

A large body of vapour from the tropics resembles an immense Leyden jar, charged with caloric or lightning. The globe itself is but the grand laboratory of nature, which the art of man has imitated on a Lilliputian scale.

“Neque aliud est natura quam ars quædam magna.”

LEIBNITZ.

Dr. Arnott has given substantially the following explanation of rain, in the *first volume* of his work on *Nat. Phil.* p. 348. The production of rain and snow, he attributes to the elevation of watery vapour into the higher regions of the atmosphere, where, from the greater dilatation of the atmosphere, it becomes colder, and thus condenses the atmospheric vapour. He takes no account of the *diminished quantity of caloric in clouds already formed*, and in mountains, high plains, &c., which abstract caloric from invisible vapour, and cause it to descend in rain.

It is notorious that when the wind blows steadily in one direction, for some time, over a level country, very little rain falls. In the great desert of Sahara, there is scarcely any rain, because the vapour transported over it from the ocean, is still further rarefied by the heat of the scorching sand, where there are no mountains to condense it. For a similar reason, we often have long droughts in the level parts of the United States during summer. Owing to the great heat of the atmosphere, the vapour brought from the Atlantic ocean by southern and eastern breezes, is not condensed, but still further expanded, until it meets with a current from the northern points of the compass—a descent of cold air from the higher regions*—or with mountains and highlands of a lower temperature, when thunder-gusts follow.

After a long drought, the first precipitations take place over moist ground, river courses, &c.—which are colder, or negative, and therefore attract the electric fluid from the positive atmospheric vapour. Hence it frequently occurs, that such situations receive two or three showers, before the rain becomes general.

* Dr. Thomson thinks that air can not descend without giving out its caloric as it falls, which he thinks would prevent it from cooling the temperature of the lower atmosphere. He seems not to have been aware, that the upper air may be more condensed by cold than the lower air by pressure, in which case its descent

When the aerial vapour is condensed into a cloud by giving out a portion of its caloric, it becomes negative, in relation to the surrounding vapour, and attracts caloric from it; which also becomes negative, and acts on the neighbouring vapour in the same way, until it is successively condensed for several hundred miles, and the rain becomes general. When the equilibrium is restored, the storm ceases, and the sky becomes serene.

Our equinoctial storms are produced by the meeting of extensive masses of vapour from opposite quarters, of different temperatures. The vast amount of condensation, caused by the meeting of opposite currents, during the vernal and autumnal equinoxes, occasions extensive vacuums—a violent rush of elastic vapour from different quarters is the consequence, constituting whirlwinds, hurricanes, and tornadoes.

In the United States, the difference of temperature between northern and southern winds, is much greater than in Europe, which has a maritime climate, and on the ocean generally, where the temperature is more uniform; for this reason, we have more intense lightning than in Europe and on the ocean, and not as M. Volney supposes, “because of the greater dryness of our atmosphere.” The most violent thunder storms on the American continent occur in June, July, and August, when the air in the middle latitudes is greatly rarefied, so as to favour a descent of the cold upper current from the equator.

Dr. Franklin believed, that vapour was held in a state of solution by electricity; but it is evident that caloric is the vaporizing agent all over the world. From which it follows, that the latent caloric of aqueous vapour is the basis of atmospheric electricity or lightning. There is little or no thunder and lightning in the polar regions.

Before leaving this interesting branch of meteorology, it may be proper to take a cursory view of the agency of caloric in producing atmospheric currents generally.

The unequal distribution of solar heat over the earth's surface, together with its annual and diurnal revolutions, enable us in some measure to comprehend the laws which determine the periodical movements of the atmosphere which surrounds it.

There are three great currents of the aerial ocean, by which it is kept in perpetual circulation:—one from the polar regions towards the equator, which is an under current; another from the equator to the poles, which is an upper current; and a third, called the equatorial current, or trade wind, which blows from east to west around the globe, for about

would be attended by a reduction of temperature, in proportion to the mass which descends from above. The sea and the air over it are less heated, because the water on its surface rises in the form of vapour, carrying off a great portion of its caloric

30° on each side of the equator. Near the equator, the trade winds blow directly from the east, but at a distance from it they become northeast and southeast near their northern and southern limits.

There is another general wind, which blows from west to east, in the middle and higher latitudes in the northern hemisphere, about two thirds of the year—while in those portions of the southern hemisphere, where there is no land, it is nearly as uniform as the tradewind.

Dr. Hadley, and after him, Dr. Franklin, attributed these currents to the following causes. "The air under the equator and between the tropics, being constantly heated and rarefied by the sun, rises; its place is supplied by air from the higher and polar latitudes, which, coming from parts of the earth that had less motion, and not suddenly acquiring the quicker motion of the equatorial earth, becomes an east wind blowing westward; the earth moving from west to east and slipping under the air." Mr. Daniell has shown conclusively, that, from the greater density of the polar atmosphere than the equatorial, its height is proportionally less; so that the air rarefied between the tropics, and rising, must flow toward the poles. Before it rose, it had acquired the greatest motion the earth's rotation could give it: it retains some degree of this motion, and descending in higher latitudes, where the earth's motion is less, becomes a westerly wind. See *Franklin's Works*, vol. 3. p. 236, and *Mr. Daniell on the Atmosphere*.

The force and direction of the trade winds are influenced by the proximity of islands and continents. Along the western side of Africa, their direction is reversed. To the distance seaward of about 300 miles, they blow towards the heated land. They are reversed in a similar manner in the Pacific, west of South America. When the sun is in the northern tropic, they extend several degrees farther north than during our winter; but when the sun is south of the equator, they prevail farther south.

There is a tract corresponding with the isothermal division of the globe, which, as we shall find hereafter, is the magnetic equator, where the great polar currents from the north and south, constituting the northeast and southeast trade winds, meet, and neutralize each other. They are characterized by a constant succession of irregular winds and calms, or storms of thunder, lightning, and rain. They are called by seamen the swamps, or rainy latitudes—and are extremely sultry, owing to the immense quantities of heat given out, during the condensation of so much aqueous vapour.

The most violent and extensive hurricanes occur

in the tropical latitudes, where evaporation and condensation are three times greater than in the middle latitudes—and, perhaps, six times greater than in the polar latitudes.

In South America, and the West India Islands, north of the equator, the rainy season is from April or May, until October; because the northern hemisphere is then exposed to the sun's heat, the air presses from the colder southern hemisphere, and from the icy tops of the Andes, causing a southern wind, which condenses the aqueous vapour of the northern tropic, producing floods of rain, at some places to the amount of 280 inches during the year. In the southern tropic, the rainy season commences in October and ends in April; because South America is then greatly heated, and becomes a focus of fluxion from the northern hemisphere, which is cooled down during the absence of the sun: thus, during the winter of North America, the colder air presses into South America and condenses its aqueous vapour. The same thing is true of the tropical portions of the old world, where wet and dry seasons prevail during half the year alternately. In middle latitudes, where the winds frequently shift, there is no protracted dry season.

The great heat of the tropics causes the vapour to ascend from three to four times higher than in the colder latitudes, which explains why it descends in such large drops.

During winter in the northern hemisphere, the polar latitudes being deprived of the sun's rays, while the tropical parallels continue to be heated, we have a predominance of northerly winds, the dense polar air pressing towards the tropics, to restore the equilibrium—while the greater velocity of the middle and tropical than of the northern latitudes, causes a *deflection* of the polar currents to the southwest and west, making northeast and east winds, which almost uniformly succeed to north winds, and continue blowing until an equilibrium is established between the higher and middle latitudes. In the mean time, under the influence of the solar rays, the land air becomes more heated than the atmosphere of the ocean, even south of it, which causes a south wind, until the equilibrium is restored between the sea and land atmosphere. During *summer* in the United States, *southwesterly* winds predominate; and *north-easterly* winds during *winter*. The same thing is true of India, China, and Arabia. They are heated during summer, and the atmosphere over them rarefied, which causes the air to flow in upon them from the tropical seas, when it is deflected to the east, by passing from latitudes that move rapidly to those which move more slowly. This is what writers call

the southwest monsoon. When the sun is south of the equator, the air moves from the *northern* land, which is cooled down, towards the equator, which has a swifter motion; thus causing the northeast monsoon, and which corresponds with the northeast wind of *our* cold season. Volney supposed that the prevailing southwest wind of the Mississippi Valley was a recoil of the tropical trade wind, deflected by the Andes of Mexico. But the fact which he states, of its crossing the Alleghanies, and advancing northeastward as far as Montreal and Quebec, is sufficient to demonstrate that it must be owing to a cause far more general and extensive in its operation than any mountain range. It is the meeting of this wind, charged with aqueous vapour from the ocean, with the colder north and northeast currents during spring and autumn, which causes vast precipitations of rain in the United States. During the latter part of August and September, when the atmosphere is filled with aqueous vapour, and meets with a colder current from the northern points of the compass, extensive hurricanes sweep the gulf of Mexico, and the southern portions of the United States. There can be no doubt that opposite currents frequently meet in the *higher* atmosphere, which are not observed at the earth's surface, and which cause precipitation. The existence of currents and counter currents in the upper atmosphere, enables us to comprehend how it is that rain frequently occurs, without any visible meeting of air from opposite quarters, and of different temperatures. When M. Robertson ascended from Castle Garden on the 4th of July, 1834, the wind was from the east; and as the aeronaut arose above the city, he was carried westward, across the Hudson River, when he disappeared in a mist or cloud, at an elevation of about 3000 feet above the surface. At this time he met with a counter current from the west, which brought him back over the city, and landed him ten miles to the eastward, on Long Island. It is quite evident, that the canopy of clouds which overspread the city in the afternoon, was condensed by the colder upper current from the west.

From the 7th until the 10th of July, 1824, the heat was excessive at New York, ranging from 86 to 96 degrees of Fahrenheit in the shade, while the wind was from the southeast. On the 10th, about 12 o'clock, the wind shifted, blowing from the west, and condensing the vapour which had been brought from the ocean, into floods of rain, which continued about three hours. It is thus that a *land* wind which *usually* brings fair weather, causes precipitation, by meeting with and absorbing caloric from the oceanic vapour. It is highly probable, that at all times,

when rain attends a southern wind, and when the land temperature exceeds that of the sea, precipitation is owing to the prevalence of a colder upper current, from an opposite direction.

What can be more sublime, than this grand lustration of the earth, by which the waters of the ocean are wafted over continents and islands, in fertilizing showers—pestilential vapours dispersed—the face of nature refreshed, and adorned with living robes of surpassing beauty? By sinking into the earth, they acquire the properties of the various mineral beds through which they pass, and again bubble up in fountains of delicious water, for the sustenance of man, as they return to the sea.

We have seen that during the coldness of winter in North America, the great movement of the atmosphere is from the cold northern regions towards the tropics, but that it is *deflected* by passing from latitudes which move slowly, to those which move more rapidly, by which means, north winds become northeast and east winds. We have also perceived, that during summer, while the land is greatly heated, the prevalent wind is from the ocean, and that when it presses directly from the south, it is changed into a southwest wind, by passing from latitudes which revolve at the rate of nine or ten hundred miles per hour, to those which move only six or eight hundred miles per hour. The same observations apply to Great Britain. These leading facts enable us to understand why it is that our *regular* winds follow the sun, producing a constant succession of circuits, from left to right, and blowing from all points of the compass. For example, the ordinary succession of our winds is from the north, next from the northeast, east, southeast, south, southwest, west, northwest, and so on, in tolerably regular succession, and rarely, if ever, performing an entire circuit in the opposite direction. As the greater portion of the United States is more heated than the ocean, even south of them, and for a longer period, the wind blows from the southwest a greater number of days than from any other quarter, throughout the year.

If the whole earth were of uniform surface and elevation, its temperature would be the same in given latitudes and seasons, and the currents of the atmosphere would present a succession of regular movements, which could be foretold with as much precision as the changes of the moon, or the increase and decrease of the tides. There would be no sudden precipitations of rain, no lightning, and no violent winds or hurricanes, because there would be a regular gradation of temperature and density of the atmosphere from the equator to the poles; but as the surface of

the earth is diversified by land and water, mountains and valleys, hills and plains, unequal temperatures in the same latitudes, and during the same seasons, result, causing all those violent and *irregular* movements of the atmosphere, termed hurricanes, tornadoes, water-spouts, &c.

We stated before, that the most extensive and violent hurricanes occur in those regions where evaporation and condensation are most abundant. Such winds depend on local rarefactions, *produced by the caloric given out in the atmosphere, by the condensation of aqueous vapour*, and are always accompanied by a depression of the barometer.* Whenever the barometer sinks *low*, we may be sure of a gale. Hurricanes, which follow a great depression of the barometer, generally blow from different quarters. If they commence from the northeast, they shift round, until they blow from the northwest, when they subside, and the clouds gradually disappear. After blowing with great violence in one direction, for some time, there is frequently a short calm or intermission, for a few minutes, when the gale blows with equal severity from an opposite quarter. It is probable that the calm is produced by the *meeting* of these violent currents from opposite quarters, which *neutralize* each other for a short time. The hurricane of August, 1831, at Barbadoes, commenced from the north, but afterwards blew from the south, which was shown by the direction of the fallen trees.

The unequal amount of condensation of aqueous vapour which takes place at different points, causes a difference in the force of hurricanes at different places. They are more violent on the shores of the West India Islands, and on the southern coast of the United States, than in the interior. The hurricanes of the East Indian seas, occur during the shifting of the monsoons, and are accompanied by torrents of rain, thunder and lightning, and are obviously owing to the coming together of extensive masses of air, from different quarters. We are informed by seamen who navigate the Atlantic between England and the United States, that while one vessel encounters a storm, others enjoy mild breezes within 40 or 50 miles of the same place, which must be owing to unequal rarefactions, caused by local condensations of vapour, on meeting with a mass of colder air. For example, the Gulf Stream, and the air over it,

are from 10 to 20 degrees warmer than other parts of the ocean in the same latitudes, the consequence of which is extensive evaporation, and when the vapour is condensed, by giving out its caloric to a colder body of air, rarefaction is produced, and a consequent rush of cold air to restore the equilibrium; which process causes a succession of local storms, water-spouts, &c. As many as sixteen water-spouts were seen at the same time by Captain Lawrence, on the borders of the Gulf Stream, Lat. 32° 48', when off Charleston, on his voyage from New Orleans to New York. The same general agency, modified by the relative position of land and water, oceanic currents, mountains and valleys, operates to a greater or less extent over all the earth. Off Cape Hatteras, which is washed by the Gulf Stream, there is a constant succession of gales, which is readily understood when we learn from our seamen, who trade from New York to New Orleans, that they always find a sensible change of temperature on passing the Cape. Hence the frequent boisterous winds which render it so notorious among navigators. The same cause renders the Cape of Good Hope a theatre of perpetual war of conflicting tempests, produced by the proximity of the *great equatorial current*, as it doubles the cape.

We shall never fully comprehend the cause of these phenomena, until we recognise the influence of the vast amount of *heat* which exists in aqueous vapour—the elastic force which it gives to the vapour, and its agency in rarefying the atmosphere, where it is given out. An eye-witness of the tremendous hurricane which desolated the Island of Barbadoes, on the 10th of August, 1831, informs me, that for an hour previous to its commencement, the heat of the atmosphere was almost insupportable—that it began about 10 o'clock at night with torrents of rain, and broad flashes or sheets of fire, in rapid succession, which threatened to overwhelm the inhabitants with a flood—or sweep them away in a tempest of flame. There can be no doubt that the amount of caloric or lightning given out during extensive hurricanes, is in proportion to the amount of condensation; but that its *intensity* or *concentration*, is less than during ordinary thunder storms; because the electric fluid is attracted by a more extensive mass of cloud, and is thus diffused. This also explains why it is, that

* The horary oscillations of the barometer, or atmospheric tides, increase as we advance from the higher latitudes towards the equator, while the *irregular* depressions and elevations of the barometer, augment from the tropical to the higher latitudes, because in the higher latitudes, the density or specific gravity of the atmosphere increases in proportion to the diminution of temperature; and because equal volumes of air, and all other gases, are equally expanded

by equal increments of heat; consequently the weight or local pressure of the atmosphere is farther altered by every local change of temperature, produced by the evolution of heat from aqueous vapour in the middle and higher latitudes, than within the tropics. Are not the atmospheric tides caused by the successive heating and rarefaction of different meridians?

the violence of lightning and thunder usually subsides after precipitation becomes general. The electric fluid being constantly drawn from the transparent or positive aqueous vapour, by the extended conducting surface of falling cloud, prevents it from accumulating into a large ball of fire, or *thunderbolt*, in the same way that a damp atmosphere prevents us from charging the Leyden battery of a common electrical machine. The streaked and forked appearance of ordinary lightning, are optical illusions, and result from the rapid passage of the electric spark through the air, which makes an impression upon the optic nerve that remains during its passage, in the same way that a burning stick, when revolved, presents the appearance of a continuous circle of fire. The fork is owing to a division of the original spark or ball into two or more sparks, which pursue a divergent course. When an electrical explosion takes place *very near* to a spectator, it always presents the appearance of a ball of fire, attended by a *simultaneous* report, like that of artillery. The reason that the report is commonly *heard* many seconds *after* the flash is seen, is owing to its *distance* from the point of observation, and to the slowness with which vibrations are propagated through the atmosphere—Hence, its rumbling, or prolonged existence. The report itself, is caused by a collapse of the air, as it fills the vacuum suddenly produced by the passage of the electric bolt through it. It is probable that lightning owes its luminosity or incandescence, to the decomposition of aqueous vapour, and to the combustion of its hydrogen by so intense a heat. The depressing influence of a cold damp atmosphere, is caused by the abstraction of this subtle vital fluid from the system, more rapidly than it is supplied by respiration.

It was first observed by Dr. Franklin, that our cold summer gusts almost always came from the west, from which he concluded, that they were caused by a descent of cold air from the upper current of the atmosphere, on its passage from the equatorial to the polar latitudes. That this is in part the cause of our prevalent west winds, during three fourths of the year, in the middle latitudes, is obvious from what we have already stated in relation to the deflection of aerial currents, as they pass over different latitudes. That this is also the true mode of accounting for our cold summer gusts, is evident from the following considerations. The land being greatly heated by the scorching rays of the sun, rarefies the atmosphere over it, until the superincumbent air sinks down and mixes with it. At the same time, it communicates its tropical motion from west to east ;

condenses the vapour of the lower atmosphere by absorbing its caloric, and thus produces our western thunder-gusts, which are often attended with hail, and almost always with a great reduction of temperature. In this way, clouds are formed suddenly, the whole sky becoming obscured by dense black vapour. It is a remarkable fact, that thunderstorms, whether attended with hail or not, almost always occur between midday and sunset, when the lower air is most heated and rarefied, so as to favour a descent of the upper current from the equator.

On the subject of hail storms, much learning and ingenuity have been expended, since the days of Franklin, without any satisfactory explanation of their cause. The celebrated Volta supposed that they were produced by a “highly electrical condition of the atmosphere”—“that the frozen masses were kept in a state of reciprocating motion between two clouds, oppositely charged with electricity, until the mass rendered the force of gravity predominant—or, until the electric tension of the cloud was exhausted by mutual reaction.” In their Report on the present state of Meteorological Science for 1832, the British Association say, that no better solution has yet been offered to the world.

We shall endeavour to demonstrate, that all hail-storms are caused by a descent of cold air from the upper regions, by the following facts—

1. They occur during *warm* weather, when the lower atmosphere is greatly rarefied.
2. They run in veins of limited extent.
3. They are often accompanied by whirlwinds, thunder, and lightning.
4. They are usually limited to the middle latitudes.
5. They come on too *suddenly* to be caused by a meeting of northern and southern air—and are attended by too intense a cold.
6. They are common in level districts, which are hemmed in by high mountains, as the south of France ; because, in such situations, the atmosphere is prevented from circulating freely, and becomes greatly rarefied, so as to favour a descent of air from the frozen regions above—which suddenly abstracts caloric from the vapour of the atmosphere in the form of lightning—when it falls in icy globules, which augment as they descend, by passing through numerous strata of aqueous vapour. This is all we shall now offer on the general doctrine of hail-storms. It is highly probable that these tornadoes or whirlwinds which run in narrow veins, and move with a velocity of from 100 to 140 miles per hour, prostrating every thing before them with resistless force,

are owing to the same general agency—viz., a sudden descent of cold air from the upper regions, which *condenses the lower transparent vapour, and produces a vacuum, as it passes from the aerial to the aqueous state*, so that the surrounding vapour rushes in from different quarters, to restore the equilibrium, with a force proportioned to its elasticity, and thus producing a violent gyratory motion. We shall be less surprised at the force and velocity of these tornadoes when we reflect, that the *volume of aqueous vapour is diminished* 1800 fold by giving out its caloric, as it passes to the cloudy or aqueous state. A striking example of a tornado of the above description, occurred about the 20th of March, 1832, lat. 35° north, in the southern part of Tennessee.

After several remarkably warm days for the season, accompanied by a south wind, a tornado came on suddenly, without the slightest warning, about seven o'clock in the evening. It excited great astonishment, as the whole day had been warm, calm, and clear, with the exception of a slight haziness, up to the moment when the crashing noise of falling timber announced the approaching storm from the west. The temperature was immediately reduced from about 75°, to several degrees below the freezing point. The tornado continued to blow with violence about ten minutes, and pursued a tract of from a quarter to half a mile in width. The next morning the wind was cold and northwesterly, and continued northerly for two days.

During the present summer, (1834,) which has been unusually hot and sultry, we have heard of tornadoes and hail-storms of limited extent, having visited almost every state in the union, from Maine to Louisiana—several of them attended with great loss of lives and property. In almost every case they pursued a course from west to east.

A remarkable example of sudden cold, caused by a descent of air from the upper regions, occurred in Cuba in 1809, 24th of May. Cornelius Roberts, a sugar planter, who resided forty years on the island, informed me, "that after a hurricane had been blowing from the southeast and south, from the 22d until 11 o'clock A. M., of the 24th, a calm followed for an hour, when the wind prevailed from the northwest. At the same time, the atmosphere became extremely dark like night, accompanied by a roaring in the air, trembling of the earth, and intense cold. Every thing green became black, as if a fire had passed over the country." Query, was not the calm, in the above case, produced by a descent of cold air, which had acquired the tropical velocity of the earth from west to east, on its passage from the

equator to latitude 23° north, and which *neutralized* the currents from the southeast and from the south, thus producing the calm?

The difference between the temperature of the ocean and atmosphere over it being small, there is little or no dew at sea, and very little thunder and lightning. The unceasing motion of its particles preserves a uniform temperature, being only two or three degrees colder during night, than during day:—while on land the difference is often ten times as great.

Air considerably rarefied by heat, receives into it a much greater quantity of vapour before it is saturated than cold air, because it affords much more room between its particles for the expanded vapour to pass through it, and because it does not condense the vapour, but allows it to accumulate in larger quantities before precipitation. Hence, though there be more invisible water in the atmosphere during summer than winter, there is less vapour: more rain in summer, and more fog in winter. In this latter state, the atmosphere is a better conductor of caloric than during summer, which thus passes freely from place to place without being accumulated, and therefore without explosion. This, together with the diminished quantity of caloric in the atmosphere, is the reason there is no thunder and lightning in the polar regions, nor in our own climate during winter. In the production of dew and frost, the earth is first cooled down by radiation, when it attracts caloric from the stratum of transparent atmospheric vapour immediately over it, by which it coalesces into dew or frost, according to the temperature of the surface.

It is highly probable, that Dr. Wells' ingenious explanation of the increased production of dew on clear nights is incorrect, and that he mistook a mere *concomitant*, for the real cause of this phenomenon. He attributes the small amount of dew which is formed under a cloudy canopy, "to the obstruction of heat radiated from the earth's surface by the clouds." Admitting that a portion of the heat radiated from the surface of the earth, is reflected back instead of being absorbed by clouds, it is insufficient to produce so decided a change of temperature. Is it not more probable, that the caloric of aqueous vapour, which is given out to the atmosphere during its condensation into clouds, is the reason that the surface of the earth is not cooled to the dew point? and that, consequently, no transparent aqueous vapour is condensed into dew? On a clear night, when no caloric is given out to the atmosphere by the condensation of vapour, the earth is cooled down by radiation, because it receives nothing to compensate for the loss of what is given off; so that the transparent aqueous vapour, contained in the

lower strata of the air, is condensed into dew. With this single exception, we know not a more beautiful example of philosophical induction, than Dr. Wells' treatise on dew. There is no dew on windy nights, for the same reason that a removal of water, and agitation, promote the solution of salts.

The formation of all fogs, is owing to a partial condensation of aqueous vapour, caused by the abstraction of heat from colder bodies—sometimes, by the mixture of air of different temperatures. For example, during autumn, the temperature of the Mississippi, Ohio, and other large rivers, is nearly the same during night and day; while that of the land is greatly *reduced* at night by radiation, especially towards morning, when it is at the extreme limit of reduction. Under such circumstances, the intermixture of the land atmosphere at the temperature of 40° F. with that over the water, which is at 45 or 50°, produces a fog or mist. The same effect is produced on the eastern coast of the United States, during autumn. The land is cooled down by radiation at night, while the temperature of the ocean remains nearly the same. During this state of things, whether the wind blows from the sea or land, a mixture of warm and cool air produces fogs. Over the banks of Newfoundland, where the warm atmosphere from the Gulf Stream, is intermixed with that of the cold water and icebergs of the north, they prevail throughout the year. Nova Scotia is, proverbially, the region of fogs. The frost rime of the polar seas, is produced in the same way, but by the agency of a lower temperature.

During summer, the Alleghany mountains are always covered with fog in the morning, during fair weather. Being cooled down at night by radiation, they abstract caloric from the transparent aqueous vapour, which is always suspended in the atmosphere in greater or less quantity, by which it is condensed into huge volumes of mist or fog, that envelope the mountains with giant folds of majestic drapery—and which are not redissolved by the solar rays, before 9 or 10 o'clock in the morning. The greater quantity of rain and snow which fall on mountains than on plains, is owing to the same cause, as we have already stated.

In all parts of the United States, there is an autumnal period called Indian summer, which usually commences some time in Novem. and continues, with occasional intermissions, through a portion of December—some seasons, in the Mississippi Valley, until Christmas. It is generally ushered in by a southerly wind, which, being warm, is filled with transparent aqueous vapour; but as the earth becomes gradually

cooler on the approach of winter, by losing more heat than it receives from the sun, the air over it is also cooled down, the transparent vapour is slightly condensed into a fine hazy mist, which reflects the blue rays of light, and gives the whole atmosphere a smoky appearance, which continues until the wind changes. As the Indian summer is always a dry season, and as the mountains and prairies are frequently on fire during such weather, the smoky appearance of the atmosphere has been attributed by many persons, to the vapour of burning substances diffused through the air. This cause, we think altogether too limited in its operation to account for the prevalence of Indian summer throughout a continent—often many hundred miles distant from burning prairies. The conflagrations which occur during this period, are the *effect* of a dry season—while the gradual cooling down of the earth, during the prevalence of warm southerly winds, is all sufficient to account for the phenomenon. The commencement and predominance of northerly winds, by mixing with them, abstract their caloric, and condense their aqueous vapour, causing dark cloudy weather, and general rains or snows, according to the latitude and elevation—after which, the reign of winter becomes established.

When we examine the mode in which galvanic electricity is produced, we discover a still more intimate relation to caloric than in any of its other forms. We shall find that in every case, it is produced by the combustion of metallic plates differently oxidizable, and that the energy of the pile is proportional to the rapidity with which the intervening acid is decomposed. The oxygen of the acid combines with the metals, and electricity is evolved, in the same way that caloric is given out during common combustion.

The principal difference is, that in common combustion, a great portion of the caloric evolved, is carried off in the vapour of the combustible materials in the state of flame, &c., while in the combustion or oxidation of metals by the pile, the caloric is not carried off, owing to the less evaporable nature of the metals; so that it is concentrated and conveyed by the conducting wires to the extremities of the battery. We shall also find, that the energy of the battery is proportional to the extent of the metallic surfaces, as well as to the decomposibility of the fluid which supplies the oxygen. When the decomposition of the fluid ceases, the pile loses its energy, and the galvanic current is at an end.

When only *two large plates* of zinc and copper are immersed into an acid solution, we obtain an imponderable fluid, differing in a slight degree from the caloric evolved by ordinary combustion. But

if we *lessen* the size of the metallic plates, while we increase their *number*, an imponderable fluid is produced, of an *intermediate* character between caloric and common electricity. When only two plates or coils are used, the apparatus is called a CALORIMOTOR, but when a great number of small plates are used, it is called an electrical or galvanic pile. If we gradually lessen the size of the plates, while we increase their number, so that the area of square feet shall be the same, we obtain an igneous fluid, possessing less and less the characteristics of caloric, and more of electricity, which *demonstrates* the identity of *caloric and electricity beyond the possibility of a doubt*: for it would be totally unphilosophical to suppose that by merely changing the size and number of the plates, a radically different fluid is evolved; while the metals are of the same material and thickness, and the acid in which they are immersed the same. The calorimotor evolves *caloric*, until the metallic plates are consumed, or until the acid is decomposed; while the galvanic pile produces electricity until the plates or acid are consumed by oxydation.

M. De la Rive of Geneva, and M. Parrot of St. Petersburg, have recently demonstrated, that in all cases where electricity was supposed to have been developed by the *mere contact* of different bodies, it was produced by *slight oxydation*, or *by friction*. When M. Parrot brought metallic plates into contact, and separated them after an interval cautiously, so as to avoid friction, he could not discern any trace of electricity with the most delicate instruments.—(*See Transactions of the British Association for 1832.*)

We are informed by writers on galvanism, that a few large plates disengage more of the galvanic fluid than a great number of small plates; but that the *intensity* of its action is in proportion to the *number* of plates. They have not given any reason for this difference, which is probably owing to the fact, that the oxydation of large plates, resembles more nearly the process of ordinary combustion, and the caloric or electric currents are less concentrated than when the plates are small—and hence cannot be conducted off by the connecting wires with the same velocity that it is when in a concentrated state. Caloric, electricity, and galvanism, have hitherto constituted a separate and distinct triad of imponderables, perfectly incomprehensible; all the phenomena of which are quite intelligible, if we refer them to the agency of one grand, primary, universal element. Will any philosopher contend, that during the oxydation of metals by a galvanic pile, there are two distinct fluids disengaged, caloric and electricity? or

that during the evaporation of water, two distinct imponderable fluids become latent in its vapour? The idea is absurd.

The earth may be considered as a huge galvanic pile, and the various combinations and decompositions which mark all its chemical changes, are effected by the agency of caloric in some of its forms.

Thus we perceive that the galvanic fluid is produced in the same way that caloric is produced, viz., by combustion, or by the union of oxygen with combustibles. M. Pouillet found, by experiment, that whenever two bodies united by combustion, the supporter gave out positive, and the combustible, negative electricity.

We know, that during every combination of oxygen with combustible matter, caloric or electricity is given out. There can be no doubt, that all earthquakes, volcanoes, and thermal waters, owe their existence to the *caloric given out* in the lower parts of the earth, in a mode similar to its evolution from a galvanic pile. *It is certainly given out during all oxidations of the earths and metals*—and we know that oxidation is perpetually going on throughout all matter, as far as we are acquainted with it. In treating of atmospheric electricity, we endeavoured to show, that it resulted from the accumulation of solar heat in aqueous vapour, and from its rapid passage *out* of this vapour into bodies charged negatively with caloric—from which it follows, that the *sun* is the great fountain of atmospheric electricity. We have seen, that caloric is universally diffused throughout terrestrial matter in a latent state, that it can be disengaged from all bodies by pressure, friction, and by chemical decomposition:—electricity is produced in the same way.

Caloric in its latent state, does not differ more from its active state, than does sulphuric acid in its separate state, from that of its combination with *soda* or *magnesia*. Nor does it differ more from electricity, than does electricity from itself, in an exhausted receiver, and under the pressure of the atmosphere.

Dr. Franklin denominated the fusion of metals by electricity, a cold fusion. He adds, “I do not mean fusion by the force of cold, but a fusion without heat, because it expands and separates their particles instantaneously, without producing combustion.” (*See his Works, vol. 3. p. 51.*) But we know, that if an electric or galvanic current is *continued* through the metals, combustion occurs with *sensible heat*—and if retarded or obstructed in its passage, it produces an explosion. If it be asked why the electric spark does not produce the sensation of heat, we answer, because of its velocity, and the subtilty of the combustible matter with which it is combined. The hand may

be held in a shower of sparks produced by the friction of steel with emery, without a sensation of heat, for the same reason, unless the sparks be very large. Yet on examination with a microscope, they are found to consist of small particles of steel in a state of fusion.

Dr. Hare, of Philadelphia, concluded from experiments with his calorimotor, that the galvanic fluid is composed of both caloric and electricity—that they are combined by what he terms the “reciprocal attraction of imponderables.” With great respect for the talents of Dr. Hare, we have not been able to discover the slightest evidence that any such affinity exists between caloric and electricity, admitting them to be distinct elementary fluids; nor has Dr. Hare offered any facts in support of this singular hypothesis.

Caloric, which is imponderable, has an undoubted attraction for ponderable matter, which is the reason it cannot be kept in a separate state, unless insulated by non-conductors, and then only for a limited time; whether in the form of domestic heat, galvanic, or common electric heat, but universally seeks a latent state, by entering into other matter, and thus becoming a constituent portion of it.

The attraction of oxygen for combustibles, which is owing to their being in different states of caloric, causes a perpetual combustion throughout nature. Perhaps there is no such thing as total quiescence in matter. Hence bituminous coal is continually changing by oxydation, and passing into a state of anthracite or hard coal. Hence also the accumulation of caloric, given out by combustion in the bosom of the earth, which is restrained for centuries by superincumbent pressure, until its elastic force overcomes all resistance, and raises mountains, or bursts forth into volcanoes.

Nearly all the changes which take place on the earth's surface, result from the combination of oxygen with other elements—which combination, as we before stated, is promoted by heat, and by electricity.

It is this tendency of oxygen to combine with other elements which causes the various decompositions of organic matter. Oxygen forms a portion of all the varieties of rocks, which are composed of a few simple elements, differently arranged and combined, by the force of molecular attraction. In the animal and vegetable kingdoms, all the varieties are produced by the different combinations of carbon, hydrogen, and nitrogen, with oxygen, together with a small proportion of salts, earths, and iron. All the dissolutions and reproductions of matter are ultimately resolvable into the subtle silent agency of heat, which reduces them to the elementary state, and thus prepares them for entering into new combinations. Solids are converted

into fluids, and fluids into gases, which are again converted into animals, plants, and minerals. In the decomposition of vegetables, the oxygen of the air unites with their carbon, making carbonic acid gas, the appropriate food of living vegetation. And so on through all the endless ramifications of nature, we perceive that death is only a transmutation of matter, by which it is prepared for entering into new forms of life and beauty.

The atmosphere is perpetually wasted by oxydation, combustion, the respiration of animals, and growth of plants; but it is also as constantly reproduced from solids and fluids, by the expansive power of heat. From the ceaseless agency of caloric in changing solids and fluids into gases, we are authorized to conclude, that if the whole atmosphere were annihilated, it would be again reproduced—or, that if all the waters of the earth were converted into solids, they would be gradually regenerated by chemical agency, under the influence of solar and terrestrial heat. How beautiful and sublime are the *ordinances of nature*! We shall endeavour to point out in another place, the difference between the attraction of vitality, and that of chemical composition. The greater amount of caloric constantly appropriated by living than dead bodies, endows them with more active powers, by which they attract the molecules of dead matter—overcome their chemical affinities—and assimilate their particles to their own structure.

We have seen that caloric is not only the cause of chemical and cohesive attraction, but that, when accumulated, it is the agent by which the molecular attractions of matter are dissolved. In short, that it is the cause of all the changes which take place throughout the globe. If rocks and salts are dissolved in water, it is caloric which effects it. If rocks and hills are carried down by running water into the plains and seas, caloric is the cause of fluidity. The purification of all metals is effected by caloric, which vaporizes and carries off their drossy combinations.

We cannot pass over in silence, what we consider a fundamental error on electricity, which has been embraced by many modern writers in France and England:—we allude to the doctrine of two distinct electricities—a doctrine which has no foundation in truth—which is contrary to the simplicity that characterizes all the operations of nature—and which will not bear the test of philosophical analysis. It has arisen from the fact, that vitreous, resinous, and many other substances, are in different states of electricity, that is, plus and minus in relation to each other.

It is stated by different authors, that whenever a body is charged with positive electricity, it tends to

produce negative electricity in all the bodies in its vicinity. (*Lib. of U. Knowledge, Article Electricity.*) This fact alone is sufficient to refute the doctrine of two distinct fluids. How is it possible to conceive that a body charged with vitreous or positive electricity, can communicate electricity of another species to a body in its vicinity? The difference is only in degree. The communicating body being charged plus, imparts a portion of its electricity to bodies near it, which become minus or negative. Every attempt to improve this simple and beautiful theory of our countryman, Dr. Franklin, has only rendered the subject of electricity more complicated and obscure. A distinction has been inferred from the difference of form and colour of electric sparks produced by positive and negative electricity. As well might we say that there are different species of caloric, modifying the numerous colours of flame in ordinary combustion. The colour and form of the electric spark depends on its size, and on the nature of the conductor through which it passes.

It is stated, that if a plate of glass with a polished surface be rubbed against one that is roughened, the former always acquires the vitreous, and the latter the resinous electricity. (*See Lib. U. K.*) What better proof could be required, that in the above cases there are not two distinct electricities developed; but that in one case it is plus, while in the other it is minus.

It is difficult to conceive how Sir Humphrey Davy mistook the attraction between electricity and ponderable matter, for an attraction between two electricities. When the ponderable elements attract each other, he supposed that it was owing to the attraction of positive for negative electricity.

Now it is demonstrable, that when two bodies are charged with the same electricity, one plus and the other minus, whether positive or negative, they attract each other—so that it is the attraction of electricity for ponderable matter, that causes bodies which contain different quantities of electricity to combine. Will it be said that the attraction of my hand for frozen mercury is owing to its being filled with positive electricity, and the mercury with a different species of electricity, which is called resinous?—and that it is the attraction of the two electricities for each other which causes the effect? The idea is preposterous. The hand is plus and the mercury is minus—and caloric is attracted from the plus to the minus body. The above mistake has been a perpetual barrier to a clear understanding of electrical attraction.

To enumerate all the effects of caloric would be to give a history of universal nature.

VOL. II.—Nos. 39 & 40. 3 R.

It has been found that different quantities of caloric are required to raise different bodies to the same temperature. For example, it requires double the quantity of heat to raise a pound of water from 32 to 100 degrees of F., that it does to raise a pound of spermaceti oil to the same temperature. The quantity of heat necessary to raise different bodies to the same temperature, has been termed by some chemical writers, their “specific caloric”—and by others “their heat of capacity”—which are, both, vague and inappropriate expressions of what is meant. Whenever we use the phrase “specific caloric,” we mean the quantity of heat which is combined with the atoms of different bodies in a latent state, which determines their volumes and specific gravities. In reality, it is difficult to conceive any other cause of specific gravity, except the constituent caloric which is combined with the ultimate atoms of different bodies. The reason why spermaceti oil, the ethers, alcohol, and all gaseous bodies, require less caloric to raise their temperatures a given number of degrees, than that of water, is, that they *already* contain a *greater quantity of heat between their* molecules, in proportion to the amount of matter, than water does. For example, the constituent heat of alcohol greatly exceeds that of water, which is proved by the following experiment.

If an ounce by weight of ice, be put into two ounces of alcohol, and the same quantity into two ounces of water at the same thermometric temperature, the ice in the *alcohol dissolves much more rapidly* than in the water—showing, that the ice receives caloric from the alcohol faster than from the water. The same thing is true of brandy, gin, and with the different species of wine, according to the relative quantity of alcohol which they contain.

It has been rendered extremely probable by the experiments of Dulong and Petit, “that the atoms of all the simple elements are equally heated or cooled by equal accessions or abstractions of heat. Should this beautiful and comprehensive law be verified by more extensive research, it will afford a key to the *atomic constitution of matter*, by which we shall be enabled to trace the relations of caloric to ponderable matter, through all the diversified phenomena of nature. It has been already found, that the specific gravity of all the gases, is the inverse measure of their specific caloric—that of hydrogen being least, it contains the largest amount of latent heat. The specific gravity of aqueous vapour, is less than that of atmospheric air, but its latent heat is greater, and so of *all the gases.*”

From the above facts and observations, it follows, that one of the principal functions of caloric is to give

volume to bodies by keeping their particles asunder ;—that in reality all light bodies are composed chiefly of caloric in a latent state. Hence, the reason why gases and all light spongy substances are bad conductors of caloric, which repels its own particles ; while the densest bodies, such as gold, platinum, and silver, are good conductors.* It would be interesting to trace the few exceptions to this general law : for example, why melted resins are better conductors than in the solid state, together with a few others.

The small specific gravity of wool, furs, silk, sponge, cork, &c., has been attributed by Dr. Thomson to the diffusion of air through their interstices ; but we have shown that the bulk of atmospheric air, and of all other bodies, is owing to caloric, which is easily demonstrated by *condensing* them by pressure, when light and heat are copiously given out, and in many cases accompanied by electrical phenomena.

The identity of caloric and electricity is strikingly exhibited by their analogous effects on ponderable matter. Electricity, as well as caloric, expands atmospheric air, water, &c. Dr. Franklin filled a small glass tube with water, and sent a charge of electricity through it, by which it was shattered to pieces, thrown all over the room, and the water evaporated. The same effect is still more obvious with oil. Electricity inflames ether, alcohol, and gunpowder, renders wine red-hot, sings the hair of animals, sets houses, trees, &c., on fire.

The calorific effect of lightning is so intense, that, when it passes down a metallic chain, instead of a rod, it often fuses the chain so as to part it, doubtless owing to the retardation of the electric fluid, by the air between the links, which is a bad conductor. The damage which is usually produced on houses, ships, trees, &c., by lightning, is owing to their being imperfect conductors ; and consequently arresting or retarding the fluid, until it tears, burns, and fuses them. Caloric repels its own particles, and is attracted by ponderable matter ; the same is true of electricity. They are also both conducted by the same materials. Caloric and electricity are both attracted by points. Caloric enters slowly into a smooth metallic body, but rapidly into one which presents a great many points. They are both produced by friction, by pressure, and by chemical action.

That caloric, or electricity, is greatly concentrated on quitting a mass of vapour in the form of lightning, is proved by the fact, that a single spark or streak

causes a general precipitation of rain ; from which we are authorized to infer, that its force and velocity are owing to its condensation. When greatly compressed in the form of steam, the velocity of its explosion is instantaneous.

Flannel, worn next the skin, acquires electrical properties, because a bad conductor, and gives out sparks freely on rubbing it. Signor Matracchi, of Forli, found by experiment, that when glass plates were exposed to the solar rays, they became electric if no clouds intervened.

The rapid motion of electricity has been considered as an argument against its identity with caloric ; but we have proved that the rapidity of its motion, is owing to its accumulation. When caloric is greatly accumulated in iron, as when it is brought to a white heat, it is radiated with great velocity, carrying off with it portions of the metal in a state of incandescence, or sparks, with a rapidity resembling the electric spark. The spark from flint and steel is produced by the percussion of hard bodies ; and moves with great rapidity.

Electricity can be drawn from a prime conductor gradually, by means of a sharp metallic point, without producing a spark, when it becomes a constant current while the cylinder is turning ;—and if directed on the forehead, it produces the sensation of a pleasant breeze. If the human body be insulated while the current is passing into it from the prime conductor, it is very soon saturated, when the fluid runs over—the hair stands erect, until the body is brought near to a conductor, when it passes off, and the equilibrium is restored.

It cannot be contended, that the velocity of the electric fluid is greater than that of the solar rays. Caloric, like electricity, moves with a velocity proportioned to its intensity at its source. Caloric and electricity, in all their forms, produce the same light. The combustion of charcoal by a current of galvanic electricity, causes the most vivid light in nature, except that of the solar beams. When decomposed with a prism, they present the same elements.

We have been thus particular in elucidating the subject of electricity, in connexion with caloric, from a *deep conviction of its importance*—and because we believe that it is not rightly understood. It is contrary to that simplicity which characterizes all the operations of nature, to make a primary distinction between them ; consequently it is unphilosophical to consider them as separate branches of pneumatology.

* That it is the expansive power of caloric which raises water into the atmosphere, and not its affinity for air, is evident from the experiments of Mr. Dalton, who proved that evaporation goes on

much more rapidly in an exhausted receiver than under common atmospheric pressure.

Though we do not pretend to understand *how* it is, that caloric in all cases exhibits electrical phenomena, we have proved, that, independent of caloric, electricity has no existence.

We have no evidence that either caloric or electricity is ever visible, unless when combined with other matter in a state of expansion. There is no matter which does not become luminous when greatly expanded by this subtile element. The light of a candle is produced by the expansion of its combustible materials by caloric;—*from which it follows, that light is composed of ponderable matter in a state of extreme diffusion.*

Dr. Fusinieri found by experiment, that the electric spark drawn from metallic conductors, carries off with it a portion of the metal, in a state of fusion, or of incandescent molecules, whatever be the nature of the metal. Are we not authorized to infer from the above facts, that solar light is composed of the matter of the sun, so exceedingly expanded by caloric, as to become phosphorescent and imponderable? The expansion of solid matter into light by caloric, is, perhaps, the nearest approach to the ultimate division of matter, that we can conceive.

Sir Isaac Newton supposed, that an ounce of ponderable matter might be so diffused, as to fill the whole space of the solar system—that not a quarter of an inch should be unoccupied by a portion of its particles.

In so large a body of matter as the sun, is there not caloric enough constantly evolved, by chemical agency, to bear off a portion of its matter through all the illimitable field of space? It is not a little surprising, that the production of light by common combustion, did not long ago lead philosophers to this conclusion. They generally agree, that in light, caloric is combined with some other material. In the case of a burning candle, what is it, but the diffusion of its combustible matter!*

That portion of the matter of light which is not caloric, probably combines with the ponderable matter of the earth, and other planets, and thus loses its phosphorescent properties, becoming a portion of common matter. Sir Isaac Newton asks the question, “are not light and common matter convertible into each other?” If the above facts and analogies establish the affirmative of this important query, as we think they do most clearly, the conclusion follows, *that all the planets and comets, including satellites, and meteoric stones, are emanations from the sun—that they have been formed by the aggregation of so-*

lar light—that they are slowly but constantly augmenting in size—and that after inconceivably long periods of revolving cycles, they will successively return to the great source from which they came, by which their existence as planets, &c. will be brought to an end, supplying the waste occasioned by solar radiation. We have no doubt, that the numerous meteoric stones which have fallen upon the earth since the historical era, were formed by the aggregation of light, far beyond our atmosphere—that they revolved around our planet in obedience to its attraction, for unknown periods of time, until that attraction brought them to its surface.

It is estimated by astronomers, that the eccentricity of the earth’s orbit is slowly diminishing; and that the moon has been moving quicker and quicker, since the first recorded eclipses. Sir William Herschel, and M. Laplace, supposed that the *sun* and all the planets were formed by the consolidation of what they termed nebulous matter. Without going back so far, we consider it extremely probable, that all cometary bodies are formed by the gradual consolidation of solar light, at great distances from the sun—that after they are thus formed, they obey his attractive influence, and return towards him with a velocity increasing as the squares of the distance diminish—but that they are prevented from falling into the sun, by the deflecting attraction of some other body, by which they are carried around the sun with extreme rapidity, and so back to the point from which they started, with a velocity diminishing as the squares of the distance increase. During such a revolution, it is evident, that the comet must describe an elliptical orbit, which gradually becomes more and more circular, as it increases in size, solidity, and rotundity, until it becomes a planetary orb. When such bodies are formed in the vicinity of a planet, they become moons, or satellites, and revolve about it, as the moons of Jupiter and Herschel.

Thus we may form some idea of the first origin of the beautiful worlds that revolve around the sun, and learn that their motions were *commenced* by the same power which has kept them revolving ever since; and that the original “*projectile force*” exerted on them, was that of gravitation.

Should any one deem it incredible, that a fluid so ethereal and refined as solar light, may be condensed into solid and opaque bodies, like the earth and other planets, we would refer him to the daily occurrence of this wonderful metamorphosis, in the conversion of common matter into flame or light, in our domestic

* It has been ascertained by the experiments of M. M. Nobili and Melloni, that phosphorescent matter is always accompanied by

caloric, though in small proportion. (*See Annales de Ch. v. et de Phys. for October, 1831.*)

fires; and its reconversion into gases, liquids, and solids. All that we behold in nature leads to the conclusion, that every part of the universe is governed by the same laws, from the minutest atoms, to the largest bodies.

From the preceding premises, it follows, that there was a time when the earth did not exist; and that a period must arrive, when it will be resolved into the great ocean of fire from which it sprung—that according to the language of sacred writ, “the earth shall be burnt up”—when all that it contains, shall be re-dissolved into its primitive elements. When contemplating this vast circulation of the solar system, and the incomputable periods of time required for the formation of such large bodies as Jupiter and Saturn, the human mind becomes sensible of its limits, while it is elevated and expanded by such views of infinite power, wisdom, and harmony. Compared with the immensity and duration of the solar system, our globe, with all its geological revolutions, dwindles into a petty *province*, marked by a few insignificant epochs. We know from actual observation, that the matter of our planet is in a state of unceasing circulation; that the internal portions of the earth, are forced up by subterranean heat, as if by the power of a mighty heart, to the surface, forming mountains and hills; while rains, rivers, and springs, are perpetually reducing them to plains, and transporting them into the ocean, again to be elevated above its waters, and to form new mountains. Thus we behold with the spiritual eye of philosophy, the whole universe in a state of perpetual motion—and that through all its untold revolutions, it is under the guidance of that unchangeable Being, who “clothes himself with light as with a garment—who maketh the clouds his chariots; who rideth upon the wings of the wind, and who maketh his ministers a flaming fire.” Sir John Herschel expresses himself at a loss to conceive how so enormous a conflagration as that of the sun can be kept up. He says, (*Treatise on Astronomy*, p. 202,) “if conjecture might be hazarded, we should look rather to the known possibility of an *indefinite generation of heat by friction*, or to its *excitement by the electric discharge*, than to any actual combustion of ponderable matter, whether solid or gaseous, for the origin of the solar radiation.”

According to our theory, it results from chemical agency. It is estimated by geologists, that there are about 200 volcanoes in operation, on the surface of our continents, and double the number beneath the ocean, making 600, which are owing to subterranean chemical action, and which evolve an enormous quantity of heat. Now if the sun be several hundred

thousand times as large as the earth; and if he be subject to the same chemical laws, he must evolve as many hundred thousand times as much light and heat by chemical, or volcanic agency, as the earth, and all sufficient to supply the solar radiation. Moreover, if we admit the existence of several hundred thousand enormous volcanoes to be distributed over the sun, there must be large opaque spaces between them, termed spots, some of which are supposed to be 45,000 miles in diameter. Whatever may be thought of such speculations, we are warranted to conclude from analogy, that the amount of heat evolved from all bodies by chemical action, is in proportion to the *amount* of matter, and that it is equal in all given periods of time. If the earth were as large as the sun, it would evolve as much heat as the sun by chemical agency, which would carry off continually a portion of its matter in the form of light, giving birth and animation to new worlds, and supplying them with light and life as the sun now does to the planets of the solar system.

Some philosophers have supposed, that those large planets, termed Saturn and Herschel, are uninhabitable, owing to their immense distance from the sun. But if there be an evolution of latent or combined heat, from all bodies, by chemical agency, in proportion to the amount of matter which they contain, these immense planets may enjoy a *temperature of their own*, which, in connexion with the heat derived from the sun, may produce a climate more equable and delightful than that of the earth, adapted to the most refined and exalted conditions of organic life. Moreover, if the atmospheres of Herschel and Saturn correspond in weight and density with their size, they must retain the solar rays, as in the polar regions of our own planet, where the temperature is from 80 to 90 degrees higher in the sun than in the shade; while in the tropics, the difference is not more than 47° F. These immense and remote bodies, may have been peopled by far higher and nobler orders of intelligence than man, for *millions of ages*; while the existence of man on the earth, according to the testimony of geology, does not extend beyond a few thousand years. What progress may they not have made in the boundless march of improvement!—exceeding, perhaps, our loftiest conceptions of flaming cherubim and seraphim.

What shall we say of those theorists, who deny the materiality of both light and heat?—who reject the evidence of their senses?—and who will not believe in the existence of any thing which cannot be weighed with our imperfect balances, like a loaf of bread? They know that caloric increases the volume

of matter ;—they also know that light is decomposable, and that it produces chemical changes on other matter ;—yet they maintain, that they are merely the result of motion among the particles of bodies. If asked what causes this motion among the atoms of ponderable matter, they are silent. If they are referred to the elastic power of caloric in a steam engine, they are equally at a loss. Admitting that caloric is the effect of motion among the particles of water in the boiler, *what causes the motion?* It is something which produces palpable and visible expansion ;—therefore, must be matter.

Dr. Young, and Sir John Herschel, tell us, that light consists of the periodic movements of an elastic medium which pervades all space—regularly recurring at equal intervals, no less than five hundred millions of millions of times in a single second. That it is by such movements communicated to the nerves of our eyes, that we see ;—nay, more, that it is the frequency of their recurrence which affects us with the sense of the diversity of colours ; that, for instance, in acquiring the sensation of redness, our eyes are affected four hundred and eighty-two millions of millions of times ; of yellowness, five hundred and forty millions of millions of times ; and of violet, seven hundred and seven millions of millions of times per second.*

The question naturally arises, what is the elastic medium to which these distinguished philosophers refer, if it be not caloric ?—and what is the cause of the rapid periodic movements, to which they attribute the sensation of different colours, admitting that such periodic movements do exist ? We doubt very much whether the above theory will stand the test of rigid analysis. It reminds us of Sir John Herschel's definition of abstract science, contained in the second chapter of his really beautiful Discourse on Natural Philosophy. He says, "that abstract science is independent of a state of nature—of creation—of every thing, in short, except memory, thought, and reason." We confess ourselves "unable to comprehend the meaning of such definitions.

Those who maintain that solar light is the result of undulations of an elastic medium, must suppose that the laws of nature are not uniform ; or that the light of a candle is also produced by the undulations of an elastic medium. The undulatory theory of light is encompassed with difficulties which to us appear insurmountable. 1. It *assumes* the existence of an *imaginary* elastic medium. 2. It assumes

the existence of different numbers of vibrations or undulations, to produce the various colours—while we know from the best defined experiments of Newton and other philosophers, that all the primary colours may be separated by the prism, and seen at the same moment. Now if all these vibrations occur simultaneously, it is evident that they would produce a total confusion of all colours. The whole theory involves an unnecessary complication of the subject, while the Newtonian theory of emanations of a subtile and material compound fluid, is perfectly simple and intelligible.

Nothing is more surprising than that such men as Count Rumford and Sir Humphrey Davy, should have doubted the material and independent existence of caloric. Sir Humphrey Davy supposed, that caloric was often produced by the combination of vitreous and resinous electricity—in which opinion he has been followed by Winterl and Oerstedt.

That the reader may more fully understand the views of Sir Humphrey Davy in regard to the nature of caloric, we shall present the following quotation from his Chemical Philosophy, page 52 ; observing at the same time, that we think it the most inconclusive reasoning contained in his valuable work, and altogether unworthy of so great a man.

"When the temperature of bodies is raised by friction, there seems to be no diminution of their capacities, using the word in its common sense ; and in many chemical changes connected with an increase of temperature, there appears to be likewise an increase of capacity. A piece of iron made red hot by hammering, cannot be strongly heated a second time by the same means, unless it has been previously introduced into a fire. This fact has been explained by supposing that the fluid of heat has been pressed out of it by the percussion, which is recovered in the fire ; but this is a very rude mechanical idea. The arrangement of its parts are altered by hammering in this way, and it is rendered brittle. By a moderate degree of friction, as it would appear from Rumford's experiments, the same piece of metal may be kept hot for any length of time ; so that if heat be pressed out, the quantity must be inexhaustible.† When any body is cooled, it occupies a smaller volume than before : it is evident, therefore, that its parts must have approached towards each other. When the body is expanded by heat, it is equally evident, that its parts must have separated from each other. The immediate cause, then, of heat, is motion, and the laws of

* See a Discourse on the Study of Natural Philosophy, by J. F. W. Herschel, Esq., F. R. S., and Young's Lectures on Natural Philosophy, vol. ii. p. 627.

† It is certainly inexhaustible while any of the metal remains to be condensed by the pressure and friction.

its communication are precisely the same as the laws of the communication of motion."

"Since all matter may be made to fill a smaller volume by cooling, it is evident that the particles of matter must have space between them; and since every body can communicate the power of expansion to a body of a lower temperature, that is, can give an expansive motion to its particles, it is a probable inference, that its own particles are possessed of motion; but as there is no change in the position of its parts as long as its temperature is uniform, the motion, if it exist, must be a vibratory or undulatory motion, or a motion of particles round each other."

We have called the attention of the reader to this passage, because it has influenced the opinions of many other writers, both in England and in this country; and because we think it fundamentally erroneous.

A remarkable proof of the *mechanical force* of caloric was exhibited the other evening in this city. On the 7th of May, about eight o'clock in the evening, the porter and victualling house of Mr. Woodward, 553 Grand Street, was struck by lightning, and considerable injury done to the wall and property. Thence it passed off across the street in an oblique direction, and struck the house of Mr. Sweetsey, corner of Mangin and Grand Streets, entering near the eaves under a dormant window, which was shivered to *atoms*; while a lady who sat near it happily escaped unhurt. In its passage through the house, it overturned a bedstead and bed completely upside down, injured the furniture, and upset a barrel of pickles in the lower part of the house. The hole which it made in entering the house, was nearly as large as a barrel. (*Vide New York Courier and Enquirer.*)

Mr. Lyell relates, on the authority of Dr. Hibbert, that at Funzie, in Fetlar, one of the Shetlands, about the middle of the last century, "a rock of mica schist, one hundred and five feet broad, and in some places four feet thick, was in an instant torn by a flash of lightning from its bed, and broken into three large, and several lesser fragments. One of these, twenty-six feet long, ten feet broad, and four feet thick, was simply turned over. The second, which was twenty-eight feet long, seventeen broad, and five feet in thickness, was hurled across a high point to the distance of fifty yards. Another broken mass, about 40 feet long, was thrown still farther, in the same direction, quite into the sea. There were also many lesser fragments scattered up and down."

We have taken this general view of caloric, for the purpose of showing the various appearances

which it exhibits, under different circumstances. There are strong reasons for believing, that the aurora borealis and australis, is one of the forms of caloric, which is given out by the upper current of the atmosphere, as it passes to the poles.

It is a well known law, that all matter gives out caloric, in passing from a rarer to a denser state; and we know that the density of the atmosphere greatly increases as we advance from the lower to the higher latitudes. We also know that the atmosphere, like all other bodies, owes its bulk to caloric. Hence it follows, that caloric must be given out by the atmosphere, as it passes from a rarer to a denser state. M. Hansteen says, "that it is a matter of common observation, in the arctic regions, confirmed by long experience, that the aurora borealis is accompanied by intense cold, especially after a mild day. He adds further, that while the auroræ are streaming, the sky becomes opaque or misty. He thinks that the aurora takes from the transparent aqueous vapour a portion of its caloric, and that it first becomes luminous on passing out of the atmosphere." M. Hansteen also states, that the auroræ are accompanied by an increase of magnetic intensity—that, when they are vivid, the horizontal needle is restless, quivers, and varies from three to five degrees from its ordinary place. (*See Edinburgh Philosophical Journal*, vol. 12, p. 89.)

It is not a little surprising, that M. Hansteen was not led by these facts to the theory above suggested. He considers the aurora as "probably the result of a struggle of powers put in activity by the variously constituted substances composing the mass of earth, which we may one day, perhaps, learn to know;"—"that it decomposes the aqueous vapour of the polar atmosphere, thus producing the polar fogs;"—from which it is evident that M. Hansteen's views of this singular phenomenon were vague and indefinite.

Notwithstanding the amount of caloric given out by the upper equatorial currents as they pass to the poles, very little effect is produced by it in moderating the climate, as it *escapes into the regions above*—where not being compressed by the atmosphere, it expands like the electric spark in an exhausted tube, into broad bands or zones and columns—filling the sky with halos, or crowns of lambent light or undulating coruscations.

It is highly probable that the auroræ are formed in the upper and rarefied regions of the atmosphere—and that the different apparent heights of the columns are owing to their different distances from the point of observation.

When the atmosphere between the observer and the

lights is hazy, they appear crimson or irised, for the same reason that the sun rises and sets red, when the lower atmosphere is filled with vapours. The aurora is seldom, if ever seen between the tropics, because the atmosphere is not convinct within the tropics; and it generally ceases shortly after 12 o'clock at night because the atmosphere acquires nearly its maximum density by that hour. The arched appearance of the aurora is an optical illusion, produced by the limits of vision, according to the laws of perspective, for the same reason that the sky presents a vaulted appearance—or a canopy of clouds which appears to be arched, while in reality they are suspended in horizontal strata.

It is worthy of notice, that the northern lights are most numerous and vivid during the long polar night, while the cold is most intense, when the upper current from the equator in its passage to the pole is greatly condensed; and that they are then exhibited in much lower latitudes than during summer.

It is stated by Sir W. E. Parry and by Captain Scoresby, that during winter in the high latitudes, the aurora were discovered more frequently south than north of Spitzbergen and Melville Island—from which we may conclude, that they are rarely formed over the latitudes of greatest cold; because the atmosphere arrives at its maximum density at the limits of greatest cold.

It is also an important fact corroborating this view of the subject, that they are seen in lower latitudes in the middle and eastern portions of America and Europe, than on the western; which are known to be considerably colder than the western, in the same latitudes, which is owing to the prevalence of west winds, which blow from the *Pacific and Atlantic oceans*, and thus temper the middle latitudes of western coasts. The effect is increased by the condensation of aqueous vapour which is brought from the Pacific and Atlantic oceans by the prevalent west winds of the middle latitudes, and which gives out caloric during its condensation and precipitation on the western coasts. Hence, the greater amount of rain which falls on the western coasts of America and Europe, than on the middle and interior portions—hence, also, the dryness of our west winds in the United States, east of the Rocky Mountains; having deposited their vapour on the western side before reaching the interior. These facts enable us to understand why *our* west winds are dry—while in England and France they are wet, and east winds dry.

The aurora is seen much oftener in Vermont, (be-

tween latitude forty-two and forty-four degrees N.) which is a cold mountainous state, than in France or England, though they are much farther north. General Martin Field has recorded in the *American Journal of Science*, that during the year 1830–31, the aurora was perceived on fifty-six nights; and that during ten years previously it was observed eighteen nights on an average, annually, at Fayettville, Vt.

We have been asked why the auroræ are not continually formed, as the atmosphere is perpetually flowing from the tropical to the higher latitudes? We might as well be asked why there is not perpetual thunder and lightning while the atmosphere is charged with vapours moving from the sea over the land? The condensations which occur in both cases are temporary and unequal, and depend on the relative temperatures of different aerial masses. When the upper current of warm atmosphere, charged with vapour, comes in contact with the cold air of the polar regions, it gives out a large portion of caloric, and the auroræ are vivid; but when the condensation is less considerable, the caloric is given out imperceptibly.

The aurora is probably given off during the condensation of the upper equatorial current, with the vapour which it contains, in a mode similar to the evolution of silent lightning of a summer evening, which produces a lambent light, much more like the aurora than the common lightning. It is highly probable, that the electric fluid is nearly all given out before the upper current reaches the centre of maximum cold, which explains why the aurora is less brilliant at Melville Island, than at Bear Lake, the Shetlands, Orkneys, &c. It also explains why in the coldest regions, as at Port Bowen, Winter Island, &c., the magnetic needle was not sensibly affected by it, as in the United States, and in the north of Europe; and why in the former places it was almost always seen by the British navigators southward of them.

Siberia, Lapland, and the Norwegian Alps, are distinguished by the frequent display of this beautiful meteor. It is said by Bergman, "that persons travelling over the high mountains of Norway have been enveloped in it." It is also stated by Captain Cook and other voyagers, that it is frequently seen in the southern hemisphere, south of Van Diemen's land, and off Cape Horn, where the cold is excessive.

Thus we perceive, that the whole earth is surrounded by an ocean of unseen but living fire. It is that which gives beauty and lustre to the blue empyrean dome—which dissolves and suspends the waters of the ocean on high—and which lets them fall in "fruitful showers to cheer the plains below." It

is the active spirit of the storm and tempest—while it clothes the fields with living green, and causes all nature to rejoice.

Whoever unfolds aright the grandeur and harmony of these manifestations of Infinite Wisdom, may be said, in the language of the eloquent Galen, “to chant a solemn hymn of lofty adoration to the great Author of the universe.”

If the facts and principles which we have thus endeavoured to unfold be founded in truth, we can perceive no limits to their application. They are intimately connected with all the phenomena of living and dead matter, and therefore with every department of human knowledge. The philosophy of

chemical affinity is still in its infancy, and presents a far more extensive field for discovery, than has ever yet been explored. He who enters upon it with enlarged views, and cultivates it with unwearied application, will greatly extend the boundaries of science, and will derive from his labours more imperishable renown, than that of the conqueror, who wades to a diadem, through the blood and tears of suffering humanity. To control the operations of nature, and render her elements subservient to the happiness of millions, is the most noble prerogative of enlightened and philanthropic man; and raises him to communion with the ever blessed SPIRIT OF ETERNAL TRUTH.

TOPOGRAPHICAL APPENDIX.

THE principal topics which claim our notice under this department, are the alterations of our country as to her domain, and the admission of states and territories since the first publication of this work. The reader will find all the changes of population belonging to the twenty-four states under the statistical tables. We now proceed to state the admission of Michigan and Arkansas into the Union, and the constitution of the territorial government of Wisconsin and Iowa.

MICHIGAN.

The following relation of the circumstances connected with the constitution of Michigan into an independent state is taken mainly from the admirable *History of Michigan*, by Mr. James H. Lanman, — a work of great interest, and which contains very important information respecting the entire Lake region.

The legislature, under the new constitution, met at Detroit, November 2d, 1835, and on the 14th December of the same year, a convention assembled for the purpose of recognizing the terms which had been proposed by congress, on which Michigan should become a member of the Union. These terms had relation to difficulties which existed between Ohio and Michigan in relation to territory. The convention recognized the conditions, and on the 25th January, 1837, a bill, passed by the senate of the United States for the admission of Michigan into the Union, passed the house of representatives by a vote of 132 to 43, and on the next day received the sanction of the president.

In April of 1834, it was ascertained that there were 87,273 free inhabitants within the then limits of Michigan. The establishment of a constitution, and the admission of Michigan as a member of the Union, constituted a marked epoch. From this period she burst forth with newness of life. Before, she had been in a state of wardship and dependence; her officers were appointed, and her policy controlled, by the federal government — a power which could not appreciate all her local wants. Hercules had sprung from the cradle. A course of measures was now adopted to

effect a vigorous and extensive system of internal improvements throughout the state. From her great local advantages, she had already become an important mart for eastern capital; and the rapid increase of population called upon the senate to effectuate substantial and thorough benefits, both for the improvement of their moral and physical condition, and to develop the resources of the country. Within the last few years, it is probable that no section of the United States has advanced more rapidly than the state of Michigan; and it seems to be a matter of great importance to proportion the public works to the growing wants of the state. The villages which had sprung up in its different sections, and the settlements which had been scattered over the whole peninsula, seemed to call upon the senate itself to carry forward these works. Besides remodelling its laws, it was made an important feature of state policy to project certain important works across the peninsula. In order to prosecute these projects, the governor was authorized to effect a loan not exceeding five millions of dollars, on which the credit of the state was to be pledged.

The board of commissioners of internal improvements were authorized to cause surveys to be made of three railroad routes across the peninsula of Michigan. The first of these routes was to commence at Detroit, in the county of Wayne, and to terminate at the mouth of the St. Joseph's River, in the county of Berrien; this was to be called the Central Railroad. The second was to commence at the navigable waters of the River Raisin, pass through the village of Monroe, in the county of Monroe, and terminate at Buffalo, in Berrien county. This is denominated the Southern Railroad. The third is to commence at Palmer, near the mouth of the Black River, in the county of St. Clair, and to terminate at the navigable waters of the Grand River, in the county of Kent, or on Lake Michigan, in the county of Ottawa. The last is denominated the Northern Railroad. For the construction of these three works, the sum of five hundred and fifty thousand dollars has been appropriated by the legislature.

The sum of twenty thousand dollars has also been appropriated for the survey of a canal, or a canal and railroad, commencing at Mt. Clemens, on the Clinton River, and terminating at or near the mouth of the Kalamazoo River; for the survey of a canal to unite the Maple and Grand Rivers with the Saginaw, and for the purchase of surveyors' and other instruments; and also for the survey of the St. Joseph, Kalamazoo, and Grand Rivers, for the purpose of improving the navigation. Forty thousand dollars were also appropriated for the construction of a canal, or a canal and railroad, on the route from Mt. Clemens to Kalamazoo, if such a work was deemed necessary. Fifteen thousand dollars were also appropriated for the construction of a canal which should unite the waters of the Saginaw with the Grand or Maple Rivers, if such a work was deemed necessary to be constructed. A project for a ship canal around the Sault de St^e Marie, opening navigation with Lake Superior, is now in action. These several projected works of internal improvement lay the foundation for the rapid development of its resources. They will furnish means and motives for immigration to the state; will bring all its products into market, and bind together, as with iron chains, its interests and its action. Besides these projected improvements, a geological survey has been commenced under the cognizance of the state, which will doubtless reveal its sources of as yet undiscovered wealth beneath the surface of the state. The important cause of education, which is acknowledged to lie at the foundation of good government and national happiness, has received extraordinary attention under state cognizance. The beneficent provision which has been made by government for the erection of a state university, has been carried out, by framing this establishment on a wise and liberal foundation. Its endowment, if well husbanded, will make it, probably, the wealthiest institution of the United States. The cause of popular education is now ripening, and a vigorous system of common instruction will soon be felt throughout every section of the state.

* The recent Discourse on Natural History, delivered before the Lyceum of Natural History of New York, by Professor John W. Francis, of that city, contains so well arranged a digest of the present state of our science concerning the products of the animal, vegetable, and mineral kingdoms of North America, that I am induced to introduce into this place a copious extract from the doctor's admirable and satisfactory lecture.

"The most casual glance over these extensive regions," says Dr. Francis, "will bring to view the richest treasures for the consideration of the naturalist. For example, of the mammalia, the most remarkable fact which courts investigation is the few species of that class which are common to both the eastern and western continents, and the many that are the appropriate inhabitants of the western: it is affirmed of the quadrumana, or handed animals, that about eighty-two species, out of one hundred and eighty-seven, are peculiar to America, not one of them

By the report of the superintendent of public instruction, published on January 5, 1837, it appears that there are in the peninsula of Michigan 1100 square miles devoted to the cause of primary education, which, estimated at the minimum price of their actual value, will produce \$520,000. The erection of the University of Michigan, which is endowed with 72 sections of land, will also go forward upon the same magnificent scale.

Besides the ample provision which has been made for public education by the establishment of common schools and libraries, the erection of the University of Michigan will exhibit a literary institution founded on a wider scale, and with a more liberal endowment, than any other on this side of the Atlantic. Its design, as expressed in the statute under which it is organized, is "to provide the inhabitants of the state with a means of acquiring a thorough knowledge of the various branches of literature, science, and the arts." The government of the university is vested in a board of twelve regents, and the course of instruction is divided into three grand departments: 1. Law; 2. Medicine; 3. Literature, Science, and the Arts. In the department of literature, science, and the arts, are established fifteen professorships, consisting of one of the ancient languages, the modern languages, rhetoric, and oratory, philosophy of history, logic and philosophy of the human mind, moral philosophy and natural theology, including the history of all regions, political economy, mathematics, natural philosophy, chemistry, and pharmacy, geology and mineralogy, botany and zoology, the fine arts, civil engineering and architecture. The department of law is constituted of three professorships,—one of natural, international, and constitutional law; one of common and statute law, and of equity; and also one of commercial and maritime law. The department of medicine consists of a professorship of anatomy, surgery, physiology, and pathology, practice of physic, obstetrics, and the diseases of women and children, and also one of materia medica and medical jurisprudence.*

being found in any other part of the world; of about one hundred and six carnivorous animals, well ascertained as peculiar to America, not one is known to exist on the eastern continent; and it is further stated, that all the mammalia which are common to the two continents, even to the extent of being considered as climatal varieties of the same species, belong to the northern parts of America, and almost all of them to the extreme north.

"It is a proverb with the medical faculty that every climate, while it has its own diseases, is also favoured with its appropriate indigenous remedies. This principle of divine harmony seems to be no less true with respect to the animals and the localities of a country. Some philosophers, as Clavigero, have affirmed that the beasts of cold regions may have passed over the northern isthmus, which perhaps connected Europe, America, and Asia; while the animals and reptiles peculiar to hot countries passed over the isthmus that connected South America

This chapter cannot, perhaps, be concluded better than by showing, in a tabular form, the names of the several governors and administrators under whose jurisdiction Michigan has been placed since the erection of the royal government in 1663.

FRENCH.	Date of Office.
Sieur de Mesy,	1663.
Sieur de Courcelle,	1665.
Sieur de Frontenac,	1672.
Sieur de Barre,	1682.
Sieur Marquis de Nonville,	1685.
Sieur de Frontenac,	1689.
Sieur Chevalier de Callieres,	1699.
The Marquis de Vaudreil,	1703.
The Marquis de Beauharnois,	1726.
Sieur Compte de la Gallisoniere,	1749.
Sieur de la Jonquiere,	1749.
The Marquis du Quesne de Menneville,	1752.
Sieur de Vaudreuil de Cavagnal,	1755.

ENGLISH GOVERNORS AFTER THE CONQUEST.

James Murray,	1765.
Paulus Emilius Irving, President,	1766.
Guy Carleton, Lieut.-Gov. and Com.-in-Chief,	1766.
Hector T. Cramahe, President,	1770.
Guy Carleton,	1774.
Frederick Haldimand,	1774.
Henry Hamilton, Lieut.-Gov. and Com.-in-Chief,	1774.
Henry Hope, Lieut.-Gov. and Com.-in-Chief,	1775.
Lord Dorchester, Governor-General of Canada,	1776.
Alured Clarke, Lieut.-Gov. and Com.-in-Chief,	1791.
Lord Dorchester,	1798.
AMERICANS.	
William Hull,	1805.
Lewis Cass,	1814.
George B. Porter,	1832.
Stevens T. Mason, Acting Governor,	1834.
John S. Horner,	1835.
Stevens T. Mason,	1836.
William Woodbridge,	1840.
John S. Barry,	1843.

with Africa. Pennant was of the belief that all the animals of America were originally derived from the north-eastern quarter of Asia, to which they had previously made their way from Mount Ararat: nor is this speculation rendered the less feasible by the reasonings of Captain Burney, in his late paper read before the Royal Society, in which he inclined to the belief that Asia and America are not only contiguous, but parts of one and the same continent. But it is difficult to reconcile this theory with the distinctive forms of animal life and the physical characteristics of countries. Whatever may be the migratory capabilities of animals, few attend the peregrinations of man. While, however, we allow that the distribution of animals involves speculations of great complexity, and presents a problem which, perhaps, will ever be beyond the ken of human wisdom to solve, it is the imperative duty of the naturalist to collect every fact which can illustrate the characteristic localities of the innumerable species which constitute the animal kingdom, and trace the association of genera and species over the surface of the earth.

"Admitting, to its fullest extent, the interchanges of place which occur among animals by reason of their migratory movements, whether accidental and irregular, or stated and periodical, and the complexity into which inquiries on this head are thus unfortunately involved, we, nevertheless, find, to our entire satisfaction, that every country is characterized by various peculiar tribes, and many of them, although the farthest removed from what we consider as the central station in which all living creatures were originally placed, are naturally the worst prepared with the means of locomotion. Thus we find that the tiger, with his Herculean strength, confines himself to the most beautiful of the Asiatic islands; the panther crouches among the branches of the African forests; the jaguar of the new world prowls along the wooded shores of the Orinoco; the moose deer roams amidst the primeval forests of the North American continent; and the gigantic cetacea gambol beneath the ices of the poles.

"The fur-bearing animals are principally confined to the regions of perpetual snow in arctic America; and while it is ascertained that some are common to both continents, many, it is equally well known, are peculiar to North America. The musk-ox is deemed to be an arctic quadruped, yet is it unknown both in Asia and Europe, while two races of deer and the prong-horned antelope are recognized only in America. The Fauna Boreali Americana of Dr. Richardson contains many illustrations of a similar sort. The zoological aspect of the northern parts of British North America, according to this intrepid and enlightened traveller, the companion of Captain Franklin in his late expedition toward the North Pole, is more allied to that of Norway and Lapland, and some of the corresponding parallels of Asia, than to the southern parts of the new world. The equatorial regions of Asia, Africa, and America, possess no quadruped which is common to more

than two of those regions; and it might be said that none of the three possesses a single mammiferous animal in common.

"Melville Island, and the rest of the North Georgian group, may be affirmed as the most northern region to which our knowledge extends. In the more northern parts we have the polar bear, whose southern limits seem to be found at fifty-five degrees: as we retire from the north to the more southern latitude, we lose the musk ox and the icy hare. The distinguished explorer of arctic zoology has also thrown a large amount of information on the zoology of the temperate parts of North America. The bison may be found far south, probably at the thirty-fifth degree of north latitude. Its characteristic positions are the great prairies to the westward of the Mississippi, where it may be seen in droves of countless numbers. Lewis and Clarke mention several species of the cervus, canis, and ursus, as inhabiting the plains on the banks of the Columbia River. The Rocky Mountain sheep and goat are, upon good authority, conjectured to be peculiar, and to differ essentially from the argali of the north of Asia. We have still further illustrative proofs of the effects which local peculiarities produce on the zoological character of a country. According to Dr. Richardson, the moose deer and the American hare are met with at the junction of Peel's River with the Mackenzie. The didelphis forms a genus, according to Cuvier, peculiar to America; and I conjecture that we have rational grounds to infer that the castor fiber, which is found on the most solitary parts of North America, is a species distinct from that of Europe, which seems not to possess or exercise the faculty of house-building. If such be the fact, we can promptly reconcile many conflicting accounts of the beaver. We may, moreover, justly boast of the mastodon as our exclusive property, whose size is greater than that of the elephant, and of heavier proportions, and, as once, an inhabitant of North America alone. The fossil skeletons of two edentata, of great size, have been discovered in America—the megatherium and the megalonyx. With the brilliant aids daily increased in this age of fossil zoology, I am yet disposed to receive with great allowance the remarks on this subject of an eminent writer, Dr. Lyell, in his work on Geology. The Siberian fossil remains which he has classified with the American mammoth, are a distinct and inferior animal from that of America, and truly a species of elephas, not mastodon. A too solicitous desire to establish a favorite hypothesis has not unfrequently detached the best minds unwittingly from the path of a legitimate philosophy.

"From the collected results of enterprising and intelligent travellers, it has been ascertained, with tolerable accuracy, that there are one hundred and forty-seven species of mammiferous animals in North America, eleven of which are fossils, and no longer occur in the living state, and twenty-eight of the cetaceous order. The remaining one hundred and eight are considered as American quadrupeds, and of these

ARKANSAS.

The admission of Arkansas into the Union took place in June, 1836. The legislature of the new state assembled on the 12th of September. S. C. Roane was elected president of the senate, and John Wilson speaker of the house of representatives, and the popular vote was declared in favour of James S. Conway for governor of the state. On the 19th, the legislature elected Ambrose H. Sevier and William S. Fulton as senators in congress.

only twenty-one species are common to North America and the old world. Mr. Jefferson, more than fifty years ago, said that, of twenty-six quadrupeds common to both countries, seven are larger in America, seven of equal size, and twelve not sufficiently examined; that there are eighteen quadrupeds peculiar to Europe, and more than four times that number peculiar to America; and that the first of these, the tapir, the largest of animals peculiar to America, weighs more than a whole column of European. But we are not contesting the opinion of certain foreign writers who have alleged the inferiority of American animals, and the deterioration of those imported. We at the present day might search in vain for a well-informed naturalist who would grant an affirmative to a position of such tendency. Such a doctrine has, in fact, long since been demonstrated erroneous, and holds at present no place in the enlightened mind of the nineteenth century.

"Our ichthyology is rich and peculiar in many species; and the law of limitation to particular localities is found to be sustained with respect to marine animals as well as those of the land; in short, naturalists have said that the species of whales differ, those of the north from those of the south seas; and geologists have remarked that the external aspect of the skeletons of fishes from the gypsum formation of Paris, is very different from that of the fresh water fishes of the bituminous marl-slate, independent of their zoological characters.

"Our American rivers abound in individuals who have their like in the waters of Europe; and we have others exclusively our own. It is known that the fish of the Ohio and of other of our great rivers are peculiarly abundant both in number and species, yet few seem to resemble those of Europe; and although the migratory attribute of many of the piscatory tribes renders it difficult to discriminate their natural locality, enough is understood to justify the assertion that we suffer not by comparison on this head. It appears that Lacepede, not many years since, described about two thousand fishes; and at this present time this number may be quadrupled. Baron Cuvier remarks that the amount of known fishes may be safely estimated above six thousand. Many of the fishes of our inland lakes have no superior for their rare edible qualities, and exist in quantities of surpassing calculation. If the fecundity of the New York waters be in any wise a criterion for determining the relative proportion of this extensive class for the United States, we may justly set down the amount for America in large numbers.

"In herpetology we have sufficient to gratify the keenest desires of the most ravenous student in this department of nature. The extraordinary aspect and habits of a considerable portion of the reptiles, in particular, which are found in the southern and western sections of the United States, imperfect and superficial as our knowledge on the subject still is, invite to researches which promise to repay with adequate returns. I believe no naturalist has elsewhere found a more magnificent specimen of the testudo coriacea, than that caught in the waters of our bay, and now exhibited in the American Museum of this city. Within a very few years, says Dr. Harlan, most important facts have been elicited, and many new and interesting species of reptiles have been added to a list formerly extensive. Several of the Ophidea are certainly peculiar, and the *crotalus horridus*, the most formidable and invulnerable of poisonous serpents, was deemed by one of the fathers of our country a fit emblem to designate the national standard for the anticipated glories of the new republic created by the war of the revolution. For my own part, I concur in the wish of the patriotic Franklin, that the bald eagle had not been chosen as the representative of the American confederacy, and I think his reasons abundantly cogent; the eagle, says he, does not get his living honestly; he is a bird of bad moral character; he is cowardly — the little king-bird, not larger than a sparrow, attacks him boldly, and drives him out of his district; therefore he is not a fit representative of that yeomanry who have thus far driven all the king-birds out of the country. So far the opinion of Dr.

TERRITORY OF FLORIDA.

There are few, if any, portions of our northern continent that have changed hands more often than Florida. It was first visited, or at least seen, by Columbus, in 1497, and immediately after by his rival, Americus Vesputius. It was formally taken possession of by Ponce de Leon, for the crown of Spain, in 1512. In 1663, England laid claim to it, as a part of the Carolinas, and as comprising a portion of Cabot's discovery. In 1682, France took possession of West

Franklin. As to the crotalus, or rattle-snake, he is a genuine *aboriginal*; he is the beau-ideal of etiquette, and a type of honesty; he is never the first to molest, and he always gives due warning of his intentions by his rattles; and whenever his person or his rights are invaded, his aim is unerring and triumphant. Our Indians, who best know him, give him this chivalric character. I would wish it to be most distinctly understood, that the observations I have just made are to be confined to the bald eagle. The indefatigable Audubon has lately given us a distinct notice and description of the *falco Washingtonianus*, or the Washington eagle. This noble bird first drew his attention while voyaging far up the Mississippi, in 1814. The Washington eagle is bold and vigorous, but jealous of his prerogatives; superior to vulgar expedients, he disdains the piratical habits of the bald eagle, and honorably maintains himself without molesting the rights of others.

"Did not time admonish us, we might take a survey of the ornithological treasures of South America and the North. With the exception of the migrants, almost all are peculiar and specifically distinct from those of other parts of the world. We know that temperature and other physical qualities of a country exert a mighty influence on the locality and habits of birds; still their migratory movements are influenced by causes which philosophy has not yet clearly explained. In tropical countries, on the approach of summer, they wing their way to temperate regions; while those of these regions pass in large numbers to the polar circles; on the approach of winter, the hyperborean regions are left almost desolate by a southern migration. The rapidity of flight and extent to which many of the feathered tribe range are sufficient to excite our highest admiration of the ways of Providence; when exhibitions of this nature are exemplified by the lofty and sustained flight of the towering eagle, and by the albatros, with his outstretched wings, in his discursive range over the wide seas from the polar portions of the great ocean to the torrid zone, we may perhaps marvel, as anatomists, at the strength of muscular power; but by how much more is our wonder increased when we find the frailest of the pennated tribe, the delicate and beautiful humming-bird, with its brilliant plumage, which winters to the southward of the United States, range in summer to the fifty-seventh degree of north latitude, and yield, in fact, to few birds in the extent of its migrations! Kotzebue traced the ruff-necked Nootka humming-bird to the sixty-first degree of the western shores. Captain King observed members of this diminutive size flying in a snow-storm near the Straits of Magellan, and, if Oviedo is veritable authority, we may equally admire their instinctive courage. We are all familiar with the prodigious flight of the crow, the gull, and the wild pigeon of America, which, in vast flocks, sometimes darken the heavens like an eclipse. It is not a little curious as a subject of inquiry, by what impulse these organized beings are influenced in these migratory movements. Job hath asked, 'Doth the hawk fly by thy wisdom, and stretch her wings towards the south?' The hybernation of the swallow has provoked discussion equally tedious as unsatisfactory. The eminently pious White, of Selborne, has at once said, the God of nature is their secret guide; and the sacred volume assures us the stork of the heavens knoweth her appointed times; and the turtle, and the crane, and the swallow, observe the time of their coming.

"The result of the latest investigations in ornithological science determines the entire number and varieties of birds at present ascertained throughout the world to be upwards of six thousand. The more southern climates exhibit the greatest riches in ornithology; thus it appears that, in the Cape of Good Hope, there are above one hundred more species of birds than are to be found throughout the whole of Europe. Great Britain and Ireland produce only two hundred and seventy-seven different kinds of birds, of which one hundred and forty-two are land birds, and one hundred and thirty-five water birds and waders. The species of Europe and North America have been classed under one hundred

Florida. It was temporary, however, and the right of possession, with the actual exercise of jurisdiction, remained with Spain, until 1763, when, by treaty, the Floridas were ceded to Great Britain, in exchange for Cuba. The rule of England was oppressive and unacceptable; and the Spaniards remaining in Florida, aided by those of Louisiana, and infected with the spirit of the revolution, under which their northern neighbors were throwing off the yoke of England, took up arms, besieged Pensacola, and became masters of West Florida in 1779. Possession was contested

until 1783, when, by the celebrated treaty of Paris, the Floridas were formally re-ceded to Spain. From her dominion, they passed to that of the United States in 1819, or rather 1821, when the last ratification of the treaty, on the part of the United States, took place.

The circumstances which led to this last, and, it may be presumed, permanent cession, were as follows: The Seminole tribe of Indians, residing in Florida, not being held in restraint by the government of Spain, manifested a frequent disposition to disturb our southern border, by that insidious predatory and

and seven genera, of which sixty-four are common to both countries; nineteen American, foreign to Europe, and twenty-four European, equally unknown in America.

"The geographical distribution of birds, as might readily be inferred from their possession of wings, is of much wider extent than that of any other animals—a subject which Humboldt has illustrated with his accustomed talents. Even the ostrich, cumbrous as it is, and slightly favoured with these organs, is still known to roam to a great extent. The falcon is found in Greenland, in Europe, in New Holland, and in North America. The white owl is seen in four quarters of the globe, and the golden plover occupies nearly as extensive a range. Major Long discovered the white-fronted swallow in the vicinity of the Rocky Mountains, and Dr. Richardson very recently noticed it as far north as Fort Chepewyan. Contrary to the opinion of Buffon, the tribe of parrots is most extensively distributed. Wilson found the Carolina parrot in the interior of Louisiana, and on the shores and tributary waters of the Mississippi and Ohio; even in the neighbourhood of Lake Michigan, in the forty-second degree of north latitude. How extensive are the treasures of North American ornithology, can only in part be inferred from the constant accessions made to the number of individual species and varieties, since the publication of the Arctic Zoology of Pennant, by Parry, Ross, Franklin, Sabine, Dr. Richardson, Skinner, and other explorers of natural history. As natives, we have unquestionably no small number.

"There is no indigenous bird of the old continent answering to the turkey of America. The grouse and the canvass-back duck are found in temperate America; few of the waders resemble those of Europe; the American flamingo is more beautiful than the European, and the scarlet ibis is peculiarly magnificent. Our mocking bird has established his unrivalled reputation, as the Orpheus of the woods, over every other songster; the Baltimore oriole demands our regards for his remarkable plumage and other qualities. The condor, according to Lewis and Clarke, inhabits not only the whole chain of the Andes in Mexico, Peru, and Chili, but is frequently seen in the range of the Rocky Mountains. Several of the species of the woodpecker have extensive geographical limits. Say found the red-headed species in the region of the Rocky Mountains, and Lewis and Clarke in the forests near the Pacific. The list might be swelled to an indefinite extent, were we to avail ourselves of the latest contributions of Wilson, Nuttall, and others. But we will more profitably wait the results of the labours of the indefatigable Audubon. In his third volume alone, just published, he informs us that he has described no less than sixty species not noticed by his illustrious predecessor, Wilson.

"The energy of the vegetable productions of the new world is displayed with a prodigality which commands our admiration. Nature, in this department, seems to have delighted in manifestations of her power, beauty, and grandeur, and to have unfolded a series of views well calculated to awaken desires the most urgent, and create associations the most noble, with our ideas of the beneficent Author of all. To him who is solicitous of accurate attainment in his knowledge of this kingdom of nature, the present is as opportune as any former period. Though the operations of man, in his measures of settlement and civilization, have not been made without encroachments on the vegetable creation, yet the primeval forests of our country still rear their venerable forms, and impress us with delight and reverence, equally by their illimitable extent and continuity, their gigantic size and altitude, their variety, and the mystery of their antiquity. Two centuries have indeed passed away since the landing of our pilgrim fathers; but it constitutes a small portion only of the longevity of these first occupiers of the American soil, who still flourish with verdure and purity in their pristine state and grandeur.

"The concurrent testimony of naturalists sustains the belief that there is a stronger resemblance in the vegetable productions of the

more northern parts of America with those of the eastern continent, than with any other part; and what may be deemed the polar vegetation has a farther southern range than is possessed in Europe. Moreover, though we have generally yielded to the assertion, that, in the northern regions, plants were very few, and of the most humble growth, yet we are justified in inferring, from the late exploratory journeys of Captain Franklin and others, that vegetation is not, even there, so parsimonious and so feeble as travellers have been wont to affirm. In the country about the southern parts of Hudson Bay, the black and white spruces correspond with the conifers of Lapland: as we recede however, from the polar regions, a consequent more promising vegetation abounds; many of the genera of plants are indeed the same as those which exist in corresponding latitudes on the eastern continent, the species often vary. Botanists have given us ample illustrations of Canadian arboriculture; and as we leave the country of the lakes, we have demonstrative evidence of the richness and magnificence of American forest scenery, even to the borders of the Gulf of Mexico. The prolific character and power of our soil, within this whole range in extent, and from the borders of the Atlantic to the Rocky Mountains and the Pacific Ocean, has been observed by many.

"It may with greater precision be remarked of the soil of the United States, that the fertility of the land of the eastern section is not so great as that of the western; and that, both by the course of rivers and in valleys, it is most productive; nor need we place in a more imposing light than has nature, individual examples of vegetable development from the magnolia and the liriiodendron of the south, to the pinus Douglasii of the great Pacific region, and other magnificent trees which enrich and beautify the lands; nor enlarge on the inborn wealth inherent in the cotton plant of Georgia, the rice of South Carolina, the tobacco of Virginia, the cerealia of our own state, or the zea maize still more abundantly prolific over our wide-spread republic. The mass of forest trees are unquestionably to be found chiefly elsewhere than in the Eastern States. The luxuriant south and south-west astonish by their fecundity, and convict Bulow and Parkinson, and other libellers, who tell us of the deteriorating qualities of the land, by the most invincible demonstration.

"The Michauxs, father and son, are orthodox authority on the development of American forest-trees; the former by his treatise on oaks, the latter by his American Sylva; and it must be considered as among the perplexing topics of inquiry, to what causes we are to attribute the popular ignorance on this subject, after so many years since the publication of these respective and convincing works. The species of large trees, says Michaux the younger, are much more numerous in North America than in Europe; in the United States there are more than one hundred and forty species that exceed thirty feet in height; in France, there are but thirty that attain to this size, of which eighteen enter into the composition of the forests, and seven only are employed in building. He who is solicitous of precise information on this gratifying subject, will turn to the Travels and to the Sylva of this French philosopher. We can only cite a few examples. The hemlock spruce, so abundant in the Northern and Eastern States as to form three quarters of the evergreen woods, with a circumference of from six to nine feet, grows to the height of some seventy or eighty feet.

"The liriiodendron, so beautiful in its foliage and flowers, so useful in the arts, and so widely diffused in the Atlantic States and in the far West, exhibits a circumference of fifteen or sixteen to twenty feet, and elevates its head to one hundred and twenty or one hundred and forty feet. The cypress of the Southern States and of Florida attains the height of one hundred and twenty feet, with a trunk of twenty-five or forty feet in circumference. We have the beech of more than one hundred feet in height. We have a great variety of the juglans, so ornamental to taste, so useful in the mechanic arts, growing to the height of from sixty feet to double that altitude. Long ago, according to Dr.

merciless warfare to which they are trained. Many acts of aggression and cruelty were committed, while Spain not only interposed no hand to prevent, but did not even withhold her own citizens from taking a part in these aggressions, and the repetition of such outrages. It, therefore, became necessary for the government of the United States to adopt active measures of defence. Under the vigorous and fearless lead of General Jackson, these measures were prosecuted with such success, that the Indians were driven back and defeated, and the Floridians compelled to lay down their arms in unconditional submission. Negotiations were then entered into between the two nations, which

resulted in the cession of the Floridas to the United States, as an indemnity on the part of Spain for spoliation upon our commerce. The treaty was signed on the part of Spain in 1819, and on the part of the United States in 1821, when full possession was taken, and General Andrew Jackson appointed the first governor. He was succeeded by William P. Duval, in 1822, who was reappointed every three years till 1834. John H. Eaton succeeded in 1834; Richard K. Call, in 1836; Robert D. Reid, in 1839; Richard K. Call, in 1841.

In the territorial governments, the executive power is vested in the governor. He is appointed by the

Rush, there were ascertained to be more than ten millions of acres of the rock or sugar-maple; and according to Warden, in 1810, ten millions of pounds of sugar were made from it; at present, it is supposed that more than twelve millions of pounds of this article are made from the sugar-cane of Louisiana alone. This beautiful forest-tree, the pride of the genus acer, often reaches the height of some seventy or eighty feet, with a proportional diameter. The magnolia invokes stronger language than we can employ. The species of this genus are remarkable for their foliage and their magnificent flowers; some of them attain to the height of seventy or eighty, or one hundred feet. They may well be ranked among the most brilliant ornaments of a rural retreat; nor need we wonder at the reverential affection with which the unfortunate empress Josephine cherished the magnolia in her garden at Malmaison.

"What a formidable display we possess of the different species of oak! They seem to be multiplied according to the diversity of climate in our western continent. Michaux has described twenty-six species, and the number has been enlarged by Lewis and Clarke, Long, Nuttall, and other explorers. We forbear to notice them more minutely; nor can we mention, only in the name, the linden, and the tilia, and the catalpa. The occidental plane, or sycamore, is not equalled by any other tree with deciduous leaves, either in the old or on the new continent. It is found abundantly from Lower Canada to Louisiana and the Floridas. It possesses a richer foliage than even the Asiatic plane. Michaux saw one at Marietta forty-seven feet in circumference four feet from the ground. In some situations, it is unquestionably the largest tree in the United States. Here I must conclude this enumeration of our vegetable productions with the pine, of which so great a variety abound.

"The different species are of different value. Their use in the arts is familiarly known and appreciated. They demand philosophical notice, and have received it from Lambert in his Monograph, and Michaux is enthusiastic on their importance. That amiable and unsophisticated disciple of nature, the late Mr. Douglass, who, a short while ago, was among us, but, who has lately gone to the possession of felicities purer and more exalted than those furnished even by the American forests, saw a species of pine upwards of three hundred feet in altitude; and Michaux, speaking of this arbiter of the woods, says, this ancient and majestic inhabitant of the North American forests is still the loftiest and most valuable of their productions, and its summits seen at an immense distance, aspiring towards heaven, far above the heads of the surrounding trees. He measured a white pine five feet four inches in circumference, and one hundred and eighty-four feet in length. He records of another that its height was stated to be two hundred and sixty feet. In adverting to the sublime elevation of our native pine, it was aptly said by some European writer, the trunk of an individual American tree is enough to constitute a becoming spire for the proudest British cathedral; and though not allowed, on this occasion, to descend on the excellence of this tenant of the forest as a material in ship-building, I am, nevertheless, just now forcibly reminded of an incident which took place, on my enjoying the society of some English savans, just after the close of the late war, at the house of Sir James Edward Smith, the president of the Linnæan Society of London. Many interrogatories were put touching the natural products of our vegetable world. 'Your ships are built of pine; you cannot boast,' says one of the guests, somewhat sarcastically, 'of the English oak.'—'Talk not to the doctor of the English oak,' interposed, with softer feelings, another, an accomplished lady of the Edgeworth school; 'the American pine has done its duty.'

"But we must hasten to say a few words on our mineralogical

resources; and here you will anticipate me in the remark, that the treasures brought daily to light give us the fullest confidence to believe that America is rich in productions of this character. The effects of difference of climate and latitudinal and longitudinal position have not that influence in this department of nature we have observed of animals and vegetables; the diversity in the old and new worlds is here not so great. The gold, and silver, and copper, of the Andes have been duly appreciated; the mountains of America abound in metals of peculiar value. We need not speak of the treasures of Mexico and Peru. As to the United States, salt is widely distributed, in great abundance, generally remote from the sea, in innumerable salt springs, in divers and distant sections, in extensive plains beyond the Rocky Mountains, and in mountainous elevations. The results of numerous manufactories give evidence of the extraordinary quantities of this indispensable material. Gypsum has been discovered in very many parts, and most abundantly in this state. Iron is found abundantly in all the states; and magnetic iron ore in large masses in excess, has been noticed in the White Mountains of New Hampshire, in the mountains of New Jersey, and elsewhere. Ores of copper are recorded in various parts of the Union, particularly in New Jersey. The same may be said of lead in many states, and to a wonderful extent in Missouri; zinc, antimony, black lead or graphite, molybdena, &c., in some quantity. Coal has providentially been found to an immense extent, and we have strong data to infer that, ere long, either the anthracite or bituminous formation will be ascertained to exist in all the individual states. The precious metals—gold, derived from Virginia and North Carolina, and silver from those and other localities—are assayed to an extent commanding importance as objects of national legislation. In the incipient state, therefore, of geological investigation, we have learned enough to argue the most triumphant returns.

"With this hasty and necessarily imperfect exposition of the ascertained resources of our physical condition and of our productions, we must at present be satisfied. We need not prophetic aid in forming a conjecture of what ultimately are the destinies of a country, the inherent resources of which are such as we have thus rapidly sketched. The impartial investigations of a day not long distant will convince us that the surest monuments of our republic's greatness and power are yet to be created. Nor is it saying too much, that neither the people at large, nor our practical statesmen, can remain long satisfied with our present limited scientific foundations, and our consequently defective views of a climate and a country of such powers. A thorough knowledge of the available means of a people is the firmest groundwork of successful legislation. All studies which promote such knowledge must increase the enjoyments of life, and augment the aggregate of individual happiness. If the commands of wisdom be regarded by a rational being, the spirit of the patriot cannot rest quiet when awakened by the contemplation of what the American confederacy now is, compared with what it was a century ago, and with what it seems destined to become a century hence. One hundred years past, the entire population of the colonies scarcely doubled the present number of inhabitants of this city alone. The child is now born who may look forward to the astonishing results of a progressive population favoured by laws the dictates of their own intelligence, the proprietors of a country in which he now lives, and which still presents to the eye an almost untrodden forest, which, within the lapse of that time, will be occupied by at least one hundred millions of people. What a gigantic theatre for the actors of that day! What scope for the man of science, and the writer of literature, and the moral instructor! How subordinate the rank of many now flourishing nations! Imagination is lost in the colossal prospect."

nomination of the president and the approval of the senate, and holds his office for the term of three years, unless sooner removed by the president. A secretary is appointed in like manner for four years, who, in case of the necessary absence of the governor from the territory, or of a vacancy in that office, performs the duties of the governor for the time being. The legislative assembly consists of a council or senate, and a house of representatives, all chosen by the qualified voters of the territory. The governor has a qualified negative upon laws passed by the assembly, and they are furthermore subject to the revision and disapproval of congress.

The territories are also represented in congress by one delegate, who has the privilege of being heard in debate, but not of voting.

Florida has been the scene of much disturbance and bloodshed, since its union with the United States; the remnants of the Indian tribes within her borders have kept up a continued annoyance, and, with the determined bravery and indomitable spirit of an Osceola and a Powell, to urge them on, and their impenetrable everglades and morasses to retreat to when hard pushed, they have been found, even for this puissant nation, not only an "ugly customer," but a formidable and very expensive foe. After a war protracted through some eight or ten years, at an expense of not less than 20,000,000, some say 30,000,000, of dollars, these tribes are at length subdued, and removed to other lands, on the west of the Mississippi.

The effects upon the prosperity of Florida of this protracted conflict must have been severe, and many years must elapse before it can fully recover from them. Its climate is delightful and salubrious, making it a favorite resort for invalids from the north. Its productions are varied and rich, being nearly the same as those of the West India Islands; besides which it abounds in live oak and other valuable timber, such as cedar, pine, &c.

The coast of East Florida is the terror of commerce. It abounds in reefs and ledges, which extend far out to sea, and which, rivalling the ancient Scylla and Charybdis, swallow up annually an incredible amount of human life and of property. These wrecks are the sources of an immense business, and give support to a large number of the inhabitants, besides making some of them rich.

From the half-civilized and demi-piratical wrecker, who hangs about the keys and banks, ready to pounce upon any unfortunate craft that may chance to find

the bottom of this inhospitable coast, through all the grades of agency, even to that of final resort, — the judicial, — the cry is ever that of the two daughters of the horseleech, "Give! give!" and happy indeed is the wretch who escapes from their clutches with a shirt on his back, and money enough to find his way home on foot.

The population of the Floridas was never accurately ascertained until the first census after their annexation to the United States. It was then (1830) 34,730. In 1840, it had increased to 54,477, being nearly 57 per cent. in ten years, and those years of war, confusion, and unexampled distress. About one half of the population are slaves.

But little progress has yet been made in introducing those educational influences and institutions, which are the glory and blessing of our land. Statistics on this point are exceedingly unsatisfactory, enabling us to gather nothing more than the comforting assurance that the foundation is laid.

WISCONSIN TERRITORY.

The official returns of the census of this region were made in 1837, as follows:—

Des Moines county,	6,257
Iowa "	5,234
Dubuque "	4,273
Crawford "	350
Brown "	2,706
Milwaukee "	2,893
Total,	22,213

The extensive tract of country owned by this enterprising population was constituted into a territory by congress, in 1836. Governor Dodge, by virtue of that act, issued a proclamation, ordering an election for a legislative assembly, in October, the same year. The members elected met at Bellemont, on the 25th inst. They were thirteen councillors and twenty-six representatives. The seat of government has been located at Madison, on the Four Lakes.

IOWA TERRITORY.

In 1838, congress set off this portion of Wisconsin into a distinct territory, with a population of 22,558. The increase of inhabitants had been remarkable after the organization of Wisconsin in 1836 and 1837. Mr. Gilbert Knapp was the first white settler in this region, and he

took possession of the soil only in November, 1834! At the period of the organization of this new territory, Racine county numbered 3,500 inhabitants. Mr. Lucas was appointed governor, and the first election took place on the second Monday of November. Mr. Chapman was elected delegate to congress. The seat of government was selected at a place called Iowa, in Johnstone county. This fine region is said to abound in coal; iron ore is also believed to be abundant. The climate of Iowa and Wisconsin is said to be the finest in America; such, at least, is the opinion of Captain Marryatt, who may be allowed to judge of the weather, if his decision be disputed in other things. The same traveller, and Mr. Murray, too, we believe, speak of the grand appearance of the forests in those

territories, in terms indicating something like rapture. The traveller in the oak openings moves, as it were, among the pillars and columns of some mighty temple, Gothic and sublime, overarched by leafy boughs; for such is the aspect of the stately trees. In every direction the view extends for hundreds of yards; the majestic trunks stand apart from one another, and there is no undergrowth to obstruct the sight. The grass grows thick and verdant, as upon a lawn; the surface is nowhere hilly, but gently undulating. It is easy to fancy the solemn beauty of such a woodland scene in the calm stillness of a summer's evening, when the declining sun, with softened splendour, casts lengthened shadows over glade and sloping side.

STATISTICS.

ABSTRACT FROM THE SIXTH CENSUS OF THE INHABITANTS OF THE UNITED STATES, JUNE 1, 1840.

States and Territories.	White Persons.			Free Colored Persons.			Slaves.			Total Aggregate	Employed in Agriculture.
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.		
STATE OF MAINE, . . .	252,989	247,449	500,438	720	435	1,355	.....	.....	.....	501,793	104,013
" " NEW HAMPSHIRE,	139,004	145,032	284,036	248	289	537	.....	1	1	284,574	77,949
" " MASSACHUSETTS,	360,679	368,351	729,030	4,654	4,014	8,668	1	.....	1	737,699	87,837
" " RHODE ISLAND, .	51,362	54,325	105,587	1,413	1,825	3,238	1	4	5	108,830	16,617
" " CONNECTICUT, .	148,300	153,556	301,856	3,891	4,214	8,105	42	12	54	310,015	54,955
" " VERMONT, . . .	146,378	144,840	291,218	364	366	730	.....	.....	.....	291,948	73,150
" " NEW YORK, . .	1,207,357	1,171,533	2,378,890	23,809	26,218	50,027	.....	4	4	2,428,921	455,954
" " NEW JERSEY, .	177,055	174,533	351,588	10,780	10,264	21,044	303	371	674	373,306	56,701
" " PENNSYLVANIA, .	844,770	831,345	1,676,115	22,752	25,102	47,854	35	29	64	1,724,033	207,533
" " DELAWARE, . .	29,259	29,302	58,561	8,626	8,293	16,919	1,371	1,234	2,605	78,085	16,015
" " MARYLAND, . .	158,636	159,081	317,717	29,173	32,547	62,020	45,959	43,536	89,495	469,232	69,851
DISTRICT OF COLUMBIA, .	14,822	15,825	30,657	3,453	4,908	8,361	2,058	2,636	4,694	43,712	384
STATE OF VIRGINIA, . .	371,223	369,745	740,968	23,818	26,024	49,842	228,661	220,326	448,987	1,239,797	318,771
" " NORTH CAROLINA,	240,047	244,823	484,870	11,227	11,505	22,732	123,546	122,271	245,817	753,419	217,095
" " SOUTH CAROLINA,	130,496	128,588	259,084	3,864	4,412	8,276	158,678	168,360	327,038	594,398	198,363
" " GEORGIA, . . .	210,534	197,161	407,695	1,374	1,379	2,753	139,355	141,609	280,964	691,392	209,383
" " ALABAMA, . . .	176,692	158,493	335,185	1,030	1,009	2,039	127,360	126,172	253,532	590,756	177,439
" " MISSISSIPPI, . .	92,256	81,818	179,074	715	651	1,376	98,003	97,208	195,211	375,651	139,724
" " LOUISIANA, . . .	89,747	68,710	158,457	11,526	13,976	25,502	86,529	81,923	168,452	352,411	79,289
" " TENNESSEE, . . .	325,434	315,193	640,627	2,796	2,728	5,524	91,477	91,582	183,059	829,210	227,739
" " KENTUCKY, . . .	305,323	284,930	590,253	3,761	3,556	7,317	91,004	91,254	182,258	779,828	197,738
" " OHIO,	775,360	726,762	1,502,122	8,740	8,602	17,342	2	1	3	1,519,467	272,579
" " INDIANA,	352,773	325,925	678,698	3,731	3,434	7,165	1	2	3	685,866	148,806
" " ILLINOIS,	255,235	217,019	472,254	1,876	1,722	3,598	168	163	331	476,183	105,337
" " MISSOURI, . . .	173,470	150,418	323,888	883	691	1,574	23,742	29,498	53,240	383,702	92,408
" " ARKANSAS, . . .	42,211	34,963	77,174	248	217	465	10,119	9,816	19,935	97,574	26,355
" " MICHIGAN, . . .	113,395	98,165	211,560	393	314	707	.....	.....	.....	212,267	56,521
TERRITORY OF FLORIDA, .	16,456	11,487	27,943	398	419	817	13,038	12,679	25,717	54,477	12,117
" " WISCONSIN, . .	18,757	11,992	30,749	101	84	185	4	7	11	30,945	7,047
" " IOWA,	24,256	18,688	42,924	93	79	172	6	10	16	43,112	10,469

A TABULAR VIEW OF THE STATE OF EDUCATION IN THE UNITED STATES, 1840.

States and Territories.	No. of Universities and Colleges.	No. of Students in Universities and Colleges.	No. of Academies and Grammar Schools.	No. of Scholars in Academies and Gram. Schools.	No. of Primary and Common Schools.	No. of Scholars in Primary and Com. Schools.	No. of Scholars at the Public Charge.	No. of Persons over 20 Years of Age who cannot read or write.
Maine,	4	266	86	8,477	3,391	164,477	60,542	3,241
New Hampshire,	2	433	68	5,799	2,127	83,632	7,715	942
Massachusetts,	4	769	251	16,746	3,362	160,277	158,451	4,448
Rhode Island,	2	324	52	3,664	434	17,355	10,749	1,614
Connecticut,	4	832	127	4,865	1,619	65,739	10,912	526
Vermont,	3	233	46	4,113	2,402	82,817	14,701	2,270
New York,	12	1,235	505	34,715	10,593	502,367	27,075	44,452
New Jersey,	3	443	66	3,027	1,207	52,583	7,128	6,385
Pennsylvania,	20	2,034	290	15,970	4,963	179,989	73,908	33,940
Delaware,	1	23	20	764	152	6,924	1,571	4,832
Maryland,	14	1,037	153	5,567	596	17,833	7,047	12,638
Virginia,	13	1,097	382	11,083	1,561	35,331	9,791	58,732
North Carolina,	2	158	141	4,398	632	14,937	124	56,609
South Carolina,	1	168	117	4,326	566	12,520	3,524	20,615
Georgia,	11	622	176	7,873	601	15,561	1,333	30,717
Alabama,	2	152	114	5,008	639	16,243	3,213	22,592
Mississippi,	7	454	71	2,553	382	8,236	107	8,360
Louisiana,	12	989	52	1,995	179	3,573	1,190	4,861
Tennessee,	8	492	152	5,539	983	25,090	7,107	58,531
Kentucky,	10	1,419	116	4,906	952	24,641	429	40,018
Ohio,	18	1,717	73	4,310	5,186	218,609	51,812	35,394
Indiana,	4	322	54	2,946	1,521	48,189	6,929	38,100
Illinois,	5	311	42	1,967	1,241	34,876	1,683	27,502
Missouri,	6	495	47	1,926	642	16,788	526	19,457
Arkansas, . . . . .	..	..	8	300	113	2,614	..	6,567
Michigan,	5	158	12	485	975	29,701	998	2,173
Territory of Florida, . . . . .	..	..	18	732	51	925	14	1,303
“ “ Wisconsin, . . . . .	..	..	2	65	77	1,937	315	1,701
“ “ Iowa, . . . . .	..	..	1	25	63	1,500	..	1,118

COMMERCIAL STATISTICS.

EXPORTS AND IMPORTS OF THE UNITED STATES, AT FOUR SUCCESSIVE PERIODS.

The following tabular statement, derived from the report of the committee of the house of representatives on-commerce, exhibits the entire import and export trade of the United States at four successive periods, beginning with the year 1825 and ending with 1840; and also our imports and exports in the trade of each of the several countries designated in the tables, during the same years. The object of this table is to show the relative value of the trade of each nation referred to, and its increase or decrease during the term.

Statement showing the total Import and Export of the United States, at the four Periods, as follows:—

Year.	Imports.	Exports.
1825	\$96,340,075	\$99,535,388
1830	70,876,920	73,849,508
1835	129,391,247	121,693,577
1840	107,141,519	131,571,950

Of these amounts there were imported from, and exported to,—

GREAT BRITAIN AND DEPENDENCIES.		FRANCE AND DEPENDENCIES.		SWEDEN AND DEPENDENCIES.		DENMARK AND DEPENDENCIES.	
Imports.	Exports.	Imports.	Exports.	Imports.	Exports.	Imports.	Exports.
1825 ..	\$42,394,812	\$44,217,525	\$11,835,581	\$11,591,327	1825 ..	\$1,417,598	\$569,550
1830 ..	26,804,984	31,647,881	8,240,885	11,806,238	1830 ..	1,398,640	961,729
1835 ..	65,949,307	60,167,699	23,362,584	20,335,066	1835 ..	1,316,508	602,593
1840 ..	39,130,923	70,322,986	17,903,127	22,355,905	1840 ..	1,275,468	652,546

SPAIN AND DEPENDENCIES.

Imports.	Exports.	Imports.	Exports.
1825 ..	\$9,322,791	\$5,840,720	\$2,156,707
1830 ..	8,373,681	6,049,051	2,491,460
1835 ..	15,617,140	7,069,279	5,574,466
1840 ..	14,019,650	7,618,347	4,927,296

BRAZIL.

Imports.	Exports.	Imports.	Exports.
1825 ..	\$9,322,791	\$5,840,720	\$2,156,707
1830 ..	8,373,681	6,049,051	2,491,460
1835 ..	15,617,140	7,069,279	5,574,466
1840 ..	14,019,650	7,618,347	4,927,296

MEXICO.

Imports.	Exports.	Imports.	Exports.
1825 ..	\$4,044,647	\$6,470,144	\$2,739,526
1830 ..	5,235,241	4,837,458	1,873,278
1835 ..	9,490,446	9,029,221	3,841,943
1840 ..	4,175,001	2,515,341	2,521,493

THE HANSE TOWNS.

Imports.	Exports.	Imports.	Exports.
1825 ..	\$4,044,647	\$6,470,144	\$2,739,526
1830 ..	5,235,241	4,837,458	1,873,278
1835 ..	9,490,446	9,029,221	3,841,943
1840 ..	4,175,001	2,515,341	2,521,493

NETHERLANDS AND DEPENDENCIES.

Imports.	Exports.	Imports.	Exports.
1825 ..	\$1,253,369	\$5,895,499	\$2,067,110
1830 ..	1,356,765	4,562,437	1,621,899
1835 ..	2,963,718	4,411,053	2,395,245
1840 ..	2,326,896	4,546,085	2,572,427

RUSSIA.

Imports.	Exports.	Imports.	Exports.
1825 ..	\$1,253,369	\$5,895,499	\$2,067,110
1830 ..	1,356,765	4,562,437	1,621,899
1835 ..	2,963,718	4,411,053	2,395,245
1840 ..	2,326,896	4,546,085	2,572,427

COMMERCE AND NAVIGATION OF THE UNITED STATES, FROM 1830 TO 1840.

I. — *Statement showing the total Amount of Imports and Exports, the aggregate Tonnage, domestic and foreign, entered into the United States, and cleared therefrom, and the Portions thereof belonging to the several Countries therein designated, in each Year, from 1830 to 1840, both inclusive: derived from the Appendix to the Report of the Hon. J. P. Kennedy, from the Committee on Commerce, May 28, 1842.*

1830. — Total import of the United States,.....	\$70,876,920
“ “ export “ “	73,849,508
American tonnage entered,.....	967,227 tons.
Foreign “ “	131,900
“ “ Total entered,	1,099,127
American tonnage cleared,.....	971,760 tons.
Foreign “ “	133,436
“ “ Total cleared,	1,105,196

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	87,231 tons.	87,823 tons.
French,.....	11,256	11,331
Spanish,.....	12,299	11,629
Hanseatic,.....	9,653	9,006
Dutch,.....	630	1,130
Swedish,.....	4,136	3,979
Danish,.....	1,234	1,218
Russian,.....	264	264
Prussian,.....	287	287
Austrian,.....	—	171
Mexican,.....	2,718	2,997

1831. — Total import of the United States,.....	\$103,191,124
“ “ export “ “	81,310,583
American tonnage entered,.....	922,952 tons.
Foreign, “ “	251,948
“ “ Total entered,	1,204,900
American tonnage cleared,.....	972,504 tons.
Foreign “ “	271,994
“ “ Total cleared,	1,244,498

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	215,887 tons.	211,270 tons.
French,.....	11,701	7,165
Spanish,.....	19,618	19,072
Hanseatic,.....	11,176	12,319
Dutch,.....	1,022	1,913
Swedish,.....	3,653	2,821
Danish,.....	6,250	4,971
Russian,.....	577	577
Prussian,.....	312	312
Austrian,.....	—	—
Mexican,.....	10,037	9,850

1832. — Total import of the United States,.....	\$101,029,266
“ “ export “ “	87,176,943
American tonnage entered,.....	949,622 tons.
Foreign “ “	393,038
“ “ Total entered,	1,342,660
American tonnage cleared,.....	974,865 tons.
Foreign “ “	387,505
“ “ Total cleared,	1,362,370

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	288,841 tons.	284,886 tons.
French,.....	22,638	23,257
Spanish,.....	26,942	29,066
Hanseatic,.....	22,351	19,540
Dutch,.....	2,860	4,369
Swedish,.....	9,784	8,468
Danish,.....	6,146	5,162
Russian,.....	1,592	1,592
Prussian,.....	—	—
Austrian,.....	1,373	1,273
Mexican,.....	7,595	7,207

1833. — Total import of the United States,.....	\$108,118,311
“ “ export “ “	90,140,433
American tonnage entered,.....	1,111,441 tons.
Foreign “ “	496,705
“ “ Total entered,	1,608,146
American tonnage cleared,.....	1,142,160 tons.
Foreign “ “	497,039
“ “ Total cleared,	1,639,199

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	383,487 tons.	377,250 tons.
French,.....	20,917	25,620
Spanish,.....	33,560	33,067
Hanseatic,.....	29,285	27,208
Dutch,.....	1,309	6,519
Swedish,.....	12,169	11,947
Danish,.....	4,669	4,310
Russian,.....	1,591	841
Prussian,.....	574	1,084
Austrian,.....	2,013	1,701
Mexican,.....	3,976	3,359

1834. — Total import of the United States,.....	\$126,521,332
“ “ export “ “	104,336,973
American tonnage entered,.....	1,074,670 tons.
Foreign “ “	568,052
“ “ Total entered,	1,642,722
American tonnage cleared,.....	1,134,220
Foreign “ “	577,700
“ “ Total cleared,	1,711,920

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	453,495 tons.	458,067 tons.
French,.....	23,649	24,537
Spanish,.....	32,056	37,804
Hanseatic,.....	25,265	24,513
Dutch,.....	2,011	2,599
Swedish,.....	13,392	14,954
Danish,.....	5,788	5,058
Russian,.....	749	962
Prussian,.....	934	1,071
Austrian,.....	1,802	2,453
Mexican,.....	5,980	2,450

1835. — Total import of the United States,.....	\$149,895,742
“ “ export “ “	121,693,577
American tonnage entered,.....	1,352,653 tons.
Foreign “ “	641,310
“ “ Total entered,	1,993,963
American tonnage cleared,.....	1,400,517 tons.
Foreign “ “	630,824
“ “ Total cleared,	2,031,341

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	529,922 tons.	523,417 tons.
French,.....	15,457	14,354
Spanish,.....	24,497	26,245
Hanseatic,.....	28,218	28,421
Dutch,.....	3,112	2,148
Swedish,.....	15,661	13,479
Danish,.....	3,570	3,186
Russian,.....	250	330
Prussian,.....	1,272	942
Austrian,.....	3,125	2,509
Mexican,.....	11,057	10,531

1836. — Total import of the United States,.....	\$189,980,035
“ “ export “ “	128,663,040
American tonnage entered,.....	1,255,384 tons.
Foreign “ “	680,213
“ “ Total entered,	1,935,597
American tonnage cleared,.....	1,315,523 tons.
Foreign “ “	674,721
“ “ Total cleared,	1,990,244

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	544,774 tons.....	538,921 tons.
French,.....	19,519	18,486
Spanish,.....	10,428	10,970
Hanseatic,.....	39,525	43,256
Dutch,.....	6,199	7,250
Swedish,.....	23,630	22,030
Danish,.....	8,463	8,065
Russian,.....	4,486	3,533
Prussian,.....	3,729	3,372
Austrian,.....	8,276	7,427
Mexican,.....	4,855	4,106

1837. — Total import of the United States,.....	\$140,989,277
“ “ export “ “	117,419,376
American tonnage entered,.....	1,299,720 tons.
Foreign “ “	765,703
Total entered,.....	2,065,423
American tonnage cleared,.....	1,266,622 tons.
Foreign “ “	756,292
Total cleared,.....	2,022,914

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	543,020 tons.....	536,420 tons.
French,.....	26,286	26,070
Spanish,.....	11,342	10,562
Hanseatic,.....	70,703	65,538
Dutch,.....	14,628	14,670
Swedish,.....	25,660	26,612
Danish,.....	16,107	17,486
Russian,.....	4,081	4,592
Prussian,.....	19,825	17,973
Austrian,.....	16,779	17,774
Mexican,.....	818	1,426

1838. — Total import of the United States,.....	\$113,717,406
“ “ export “ “	108,486,616
American tonnage entered,.....	1,302,974 tons.
Foreign “ “	592,110
Total entered,.....	1,895,084
American tonnage cleared,.....	1,408,761 tons.
Foreign “ “	604,166
Total cleared,.....	2,012,927

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	484,702 tons.....	486,904 tons.
French,.....	20,570	21,849
Spanish,.....	13,183	13,607
Hanseatic,.....	37,538	39,636
Dutch,.....	4,436	4,536
Swedish,.....	8,695	11,542
Danish,.....	3,447	4,765
Russian,.....	1,430	1,604
Prussian,.....	2,087	2,321
Austrian,.....	2,452	3,382
Mexican,.....	962	976

1839. — Total import of the United States,.....	\$162,092,132
“ “ export “ “	121,028,416
American tonnage entered,.....	1,491,279 tons.
Foreign “ “	624,814
Total entered,.....	2,116,093
American tonnage cleared,.....	1,477,928 tons.
Foreign “ “	611,839
Total cleared,.....	2,089,767

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	495,353 tons.....	491,455 tons.
French,.....	22,686	21,680
Spanish,.....	16,501	18,753
Hanseatic,.....	41,139	38,067
Dutch,.....	3,384	3,231
Swedish,.....	17,725	18,787
Danish,.....	5,053	4,759
Russian,.....	2,788	1,294
Prussian,.....	2,204	1,213
Austrian,.....	1,602	2,573
Mexican,.....	995	1,300

1840. — Total import of the United States,.....	\$107,141,519
“ “ export “ “	132,085,946
American tonnage entered,.....	1,576,946 tons.
Foreign “ “	712,363
Total entered,.....	2,289,309
American tonnage cleared,.....	1,647,009 tons.
Foreign “ “	706,486
Total cleared,.....	2,353,495

Among the foreign tonnage were —

	Entered.	Cleared.
Of British,.....	582,424 tons.....	563,735 tons.
French,.....	30,701	29,553
Spanish,.....	15,927	16,768
Hanseatic,.....	41,874	44,772
Dutch,.....	3,629	3,437
Swedish,.....	15,376	19,067
Danish,.....	4,289	5,886
Russian,.....	322	1,188
Prussian,.....	1,394	1,659
Austrian,.....	3,957	4,145
Mexican,.....	1,544	2,137

II. — Showing the Amount of Imports and Exports, and the American and Foreign Tonnage annually entered and cleared in the United States, from the Year 1821 to the Year 1830, both inclusive; from the same Source as above.

1821. — Total import of the United States,.....	\$62,585,724
“ “ export “ “	64,974,382
American tonnage entered,.....	765,098 tons.
Foreign “ “	81,526
Total entered,.....	846,624
American tonnage cleared,.....	804,947 tons.
Foreign “ “	83,073
Total cleared,.....	888,020

1822. — Total import of the United States,.....	\$83,241,541
“ “ export “ “	72,160,281
American tonnage entered,.....	787,964 tons.
Foreign “ “	100,541
Total entered,.....	888,505
American tonnage cleared,.....	813,748 tons.
Foreign “ “	97,490
Total cleared,.....	911,238

1823. — Total import of the United States,.....	\$77,579,267
“ “ export “ “	74,699,030
American tonnage entered,.....	775,271 tons.
Foreign “ “	119,468
Total entered,.....	894,739
American tonnage cleared,.....	810,761 tons.
Foreign “ “	119,740
Total cleared,.....	930,501

1824. — Total import of the United States,.....	\$80,549,007
“ “ export “ “	75,986,657
American tonnage entered,.....	850,033 tons.
Foreign “ “	102,367
Total entered,.....	952,400
American tonnage cleared,.....	919,278 tons.
Foreign “ “	102,552
Total cleared,.....	1,021,830

1825. — Total import of the United States,.....	\$96,340,075
“ “ export “ “	99,535,388
American tonnage entered,.....	880,754 tons.
Foreign “ “	92,927
Total entered,.....	973,681
American tonnage cleared,.....	960,366 tons.
Foreign “ “	95,080
Total cleared,.....	1,055,446

1826. — Total import of the United States,.....	\$84,974,477
“ “ export “ “	77,595,322
American tonnage entered,.....	942,206 tons.
Foreign “ “	105,654
Total entered,.....	1,047,860
American tonnage cleared,.....	953,012 tons.
Foreign “ “	99,417
Total cleared,.....	1,052,429

1827.— Total import of the United States,	\$79,484,068
“ “ export “ “	82,321,827
American tonnage entered,	918,361 tons.
Foreign “ “	137,589
Total entered,	1,055,950
American tonnage cleared,	980,542 tons.
Foreign “ “	131,250
Total cleared,	1,111,792
1828.— Total import of the United States,	\$88,509,824
“ “ export “ “	72,264,686
American tonnage entered,	868,381 tons.
Foreign “ “	150,223
Total entered,	1,018,604
American tonnage cleared,	897,404 tons.
Foreign “ “	151,030
Total cleared,	1,048,434
1829.— Total import of the United States,	\$74,492,527
“ “ export “ “	72,358,671
American tonnage entered,	872,949 tons.
Foreign “ “	130,743
Total entered,	1,003,692
American tonnage cleared,	944,799 tons.
Foreign “ “	133,006
Total cleared,	1,077,805
1830.— Total import of the United States,	\$70,876,920
“ “ export “ “	73,849,508
American tonnage entered,	967,227 tons.
Foreign “ “	131,900
Total entered,	1,099,127
American tonnage cleared,	971,760 tons.
Foreign “ “	133,436
Total cleared,	1,105,196

III.— *Statement of Value of Cargoes carried by American and Foreign Vessels; being the Aggregate of Imports and Exports of each Year; and of the Portion of such Aggregate carried respectively by Vessels of the United States and Foreign Vessels;— these compared with the Aggregate of American and Foreign Tonnage entering and clearing in each Year; firstly, from the Year 1821 to 1830, and secondly, from 1831 to 1840, both inclusive; expressed in Millions and Tenths.*

	American Cargoes.	Foreign Cargoes.
1.— 1821.....	\$113.1 millions.....	\$14.2 millions.
1822.....	137.5 “	17.6 “
1823.....	136.7 “	15.3 “
1824.....	141.5 “	13.0 “
1825.....	180.6 “	15.1 “
1826.....	150.1 “	12.0 “
1827.....	146.9 “	14.7 “
1828.....	142.9 “	17.6 “
1829.....	130.3 “	15.3 “
1830.....	129.8 “	14.7 “
	\$1,409.4 “	\$150.4 “

Aggregate of American tonnage entering and clearing as per table No. III., 17.5 millions tons.
Do. Foreign, 2.2 “
\$1,409.4 millions American cargoes to 17.5 millions tons, American tonnage; \$80.5 to 1.
\$150.4 millions foreign cargoes to 2.2 millions tons, foreign tonnage; \$66. to 1.

	American Cargoes.	Foreign Cargoes.
2.— 1831.....	\$159.3 millions.....	\$24.9 millions.
1832.....	156.3 “	31.7 “
1833.....	165.9 “	32.0 “
1834.....	191.3 “	39.4 “
1835.....	229.3 “	42.0 “
1836.....	268.6 “	49.7 “
1837.....	213.2 “	44.9 “
1838.....	192.4 “	29.1 “
1839.....	238.5 “	44.4 “
1840.....	198.3 “	40.6 “
	\$2,013.1 “	\$378.7 “

Aggregate of American tonnage entering and clearing, as per table No. I., 25.0 millions tons.
Do. Foreign, 11.4 “
\$2,013.1 millions American cargoes to 25 millions American tonnage; \$80.5 to 1.
\$378.7 millions foreign cargoes to 11.4 millions foreign tonnage; \$33.4 to 1.

NOTE.— The amounts of this table slightly vary from the statement of tables No. I. and II., because the fractions are not fully given. The ratio of cargo to tonnage is also calculated without reference to fractions.

IV.— *Showing the Ratio of Tonnage, American and Foreign, to Value of Cargoes in three different Years, selected out of each Term of ten Years, computed without accurate Reference to Fractions.*

	AMERICAN.	Ratio.
1st term.		
1821....	\$113 millions of cargo, ..to 1.5 millions of tons, ..	.75 to 1
1825....	195 do. ..to 1.8 do. ..	.108 to 1
1830....	144 do. ..to 1.9 do. ..	.75 to 1
	FOREIGN.	
1821....	\$14.2 millions of cargo, ..to 0.16 millions of tons, ..	.90 to 1
1825....	15.1 do. ..to 0.18 do. ..	.84 to 1
1830....	14.7 do. ..to 0.26 do. ..	.57 to 1
	AMERICAN.	
2d term.		
1831....	\$159.3 millions of cargo, ..to 1.9 millions of tons, ..	.84 to 1
1835....	229.3 do. ..to 2.7 do. ..	.85 to 1
1840....	198.3 do. ..to 3.2 do. ..	.62 to 1
	FOREIGN.	
1831....	\$25 millions of cargo, ..to 0.55 millions of tons, ..	45.5 to 1
1835....	42 do. ..to 1.30 do. ..	32.3 to 1
1840....	40.6 do. ..to 1.40 do. ..	29 to 1

NOTE.— This table exhibits a very remarkable increase of the ratio of foreign tonnage to the value of the cargo; showing how much the carriage of the bulky commodities of our export has increased in foreign vessels. In 1821 the foreign tonnage carried \$90 millions worth of cargo in 1 million of tons; in 1840 it carried \$29 millions in 1,— showing that the foreign tonnage is rapidly getting possession of that branch of our carrying trade which requires the greatest amount of shipping, and which is, therefore, the most valuable to navigation.

V.— *Statement showing the Number of enrolled and licensed Vessels built in the United States; also, the Number lost or condemned, and the Balance of Increase in each Year.*

Years.	Quantity built.	Lost or condemned.	Actual increase.
	Tons.	Tons.	Tons.
Year ending December 31, 1830,	36,841	7,551	29,289
“ “ “ 1831,	40,241	7,932	32,308
“ “ “ 1832,	71,556	7,664	63,891
“ “ “ 1833,	88,647	5,951	82,694
“ “ “ 1834,	65,707	4,824	60,882
From September 30, 1835,			
to September 30, 1836,	66,982	5,619	61,361
“ “ “ 1837,	80,643	9,163	71,478
“ “ “ 1838,	71,275	6,208	65,067
“ “ “ 1839,	65,922	7,729	58,193
“ “ “ 1840,	62,187	13,174	49,012

INDEX.

The subjects marked with an asterisk (*) in the Index, are additions of the American Editor.

- ABRAHAM, battle of the heights of, i. 176.
- * Adams, Samuel, excluded from the general pardon, after the battle of Lexington, i. 224.
- * ———, John, the father of the American navy; report in the legislature of Massachusetts, i. 230.
- 's administration, i. 315.
- * ———, John Quincy, his speech to Lafayette; and the general's answer, i. 361.
- Agriculture of the United States, ii. 139; progressive improvement of, 140; clearing the land, 141; manures, drainage, *ib.*; culture of wheat, rye, turnips, &c., 142; animals employed in, 144.
- Alabama, topography of, ii. 466; produce, *ib.*; roads, 467; chief towns, *ib.*; admitted into the Union, i. 353.
- Alexandria, ii. 440; surrender of, i. 340.
- Alligator, the, ii. 133.
- America, supposed early discoveries of, i. 11; hostilities commenced in 1775, i. 223.
- * American literature, with notices of several writers and their works, from the earliest history of the country, ii. 272.
- Amherst College, ii. 341.
- Amygdaloid, ii. 43.
- André, Major, execution of, i. 281.
- Annapolis, ii. 422.
- Antinomian dissensions, i. 52.
- Apalachian Indians, war with, i. 149; mountains, ii. 5; geology of, 44; character of, 52.
- Arkansas River, ii. 12; territory, ii. 472; town of, *ib.*
- Arnold, General, treachery of, i. 230; memoir of, *ib.*
- * ———, his conduct in the campaign of 1777, i. 265.
- Arts, state of, in the United States, ii. 285.
- * ———, progress of, in the United States, ii. 302.
- Assemblies, ii. 307.
- Astoria, ii. 476.
- Athens, university of, ii. 409.
- Atlantic slope, ii. 4.
- * Attraction of caloric, ii. 479.
- Augusta, ii. 335—466.
- Augustine, Fort, expedition against, i. 148.
- * Avon, waters of, described by Dr. J. W. Francis, of New York; considered efficacious in many diseases, ii. 81.
- Bacon Academy, ii. 346.
- Baltimore, city of, ii. 422; battle near, i. 340; college of, ii. 421.
- * Ballston waters analyzed by Dr. Hosack, ii. 76.
- Bangor, ii. 335.
- Banks, number of, ii. 205; bank of United States, *ib.*; charter, *ib.*
- Baptists, persecution of, i. 60; in the United States, ii. 255.
- * Barbary powers, humbled by the energy of the American navy, i. 326.
- Barlow's voyage of discovery, i. 20.
- Barrens, soil of, ii. 30.
- Batesville, ii. 473.
- Bath, ii. 335.
- Baton Rouge, ii. 472.
- * Baum's defeat and death, with a minute account of the battle, i. 258.
- Bear, the black, ii. 101; grizzly, 102.
- Beasts, ii. 100.
- Beaufort, ii. 462.
- Beaver, the, ii. 105.
- Bellamont, Earl, appointed governor of New York, i. 123; his death, 124.
- Benevolent societies, ii. 271.
- Bennington, ii. 339.
- Berlin decree, effect of, i. 229.
- Bermudas, the, sold, i. 30.
- Bethlehem, ii. 408.
- Beverly, ii. 343.
- * Biddle, of the navy, i. 231.
- Birds, ii. 110.
- Bison, the, ii. 109.
- Black mountains, ii. 14; geology of, 50.
- Blakely, ii. 468.
- Books, importation of, ii. 184.
- Boston, description of, ii. 341; first church founded in, i. 48; first general court at, *ib.*; proclamation of William and Mary at, 67; the peace of Ryswick proclaimed at, 72; riots at, 77; tumults in, occasioned by the stamp act, 190; tumults in, 198; convention at, 199; arrival of troops at, *ib.*; affray between the troops and populace in, 203; convention at, 219; attacked by General Howe, 236.
- Botany, ii. 84.
- Boulders, ii. 58.
- Bowdoin College, ii. 334.
- * Braddock's defeat at Monongahela, i. 167.
- * Bradstreet's, Colonel, nature of the swell of the lakes, ii. 17.
- Brandywine, battle of, i. 255.
- Brattleborough, ii. 339.
- Bridgport, ii. 348.
- Bristol, ii. 345.
- British parliament, proceedings of, i. 192.
- Brooklyn, ii. 389.
- Brookville, ii. 413.
- Brown University, ii. 344.
- Brunswick, ii. 335—466.
- * Bunker Hill, battle of, i. 226.
- * ——— Monument, i. 356.
- Burgoyne, General, surrenders to the Americans, i. 263.
- * ———'s surrender, i. 283.
- Burlington, University of, ii. 338.
- Burr, Colonel, conspiracy of, i. 329.
- Cabot, voyage of, i. 12.
- Cadron, ii. 473.
- Cahokia, ii. 415.
- * Calef, Robert, the fearless exposé of the delusion of witchcraft, i. 69.
- * Caloric, principles of, ii. 477.

- Cambridge, introduction of printing at, i. 54.
 Camden, battle near, i. 277.
 Camp meetings, ii. 269.
 Campaign of 1757, i. 169; of 1758, 171; of 1759, 173; of 1776, 245; of 1779, 273.
 Canada, French settlements in, i. 163; expedition to, in 1775, 231; evacuated by the American troops, 237; campaign in, 335.
 * Canonicus, Indian chief, sold lands to Roger Williams, i. 105.
 Cape Girardeau, ii. 418.
 Carolina, North, topography of, ii. 448; produce, *ib.*; agriculture, 449; chief towns, *ib.*
 ———, South, topography of, ii. 458; soil, 459; roads, *ib.*; chief towns, 460.
 ———, North and South, history of, i. 139; charter granted to Lord Clarendon, 140; settlement of emigrants from Barbadoes, *ib.*; constitution, 141; Dutch colony transferred to, 143; sanguinary warfare in, 281; several forts surrendered, 283.
 Caroline, Fort, taken by the Spaniards, i. 16.
 Carpeting, manufacture of, ii. 181.
 Cartier, voyage of, i. 13; his second attempt at discovery, *ib.*
 * Carver, John, the first governor of Plymouth colony, i. 42.
 Castine, ii. 335.
 Census taken in 1801, i. 322.
 * Chatham, Earl of, honoured and esteemed in America, i. 171.
 Champlain, Lake, naval engagement on, i. 253.
 Charlestown, Massachusetts, ii. 343.
 Charleston, ii. 460; settlement at, i. 47; defeat of the British at, i. 240; siege of, 1780, i. 276.
 Charlottesville, ii. 444.
 * Cherokee alphabet, invented by George Guess, his Indian name Seequah-yah, ii. 317.
 Cherokees, present state of, ii. 317.
 Chesapeake Bay, Captain Newport first lands in, i. 25; builds Jamestown, *ib.*
 ——— frigate, attack on the, i. 329.
 ——— and Ohio canal, ii. 440.
 Chestertown, ii. 422.
 Chillicothe, ii. 411.
 Chippewa, battle of, i. 339.
 Chippewyan desert, ii. 43, 476, or Rocky mountains, ii. 6; geology of, 40.
 * Cholera, in the United States; its progress and fatality, i. 382.
 Cincinnati, ii. 411.
 Circulating medium, observations on, ii. 203; amount of, *ib.*
 Civil list, ii. 207.
 Classop, Fort, ii. 476.
 Clarksville, ii. 458.
 Cleveland, ii. 411.
 * Clinton, De Witt, nature of tides in the lakes of the West, ii. 15.
 Climate, ii. 18; very cold region, *ib.*; cold region, 19; temperate region, 20; hot region, 21; general view of temperature, 23.
 * ——— and pestilence, Dr. Francis's remark, ii. 37.
 * ——— Dr. Hosack on the same, ii. 37.
 * Climatology, ii. 478.
 Coal, ii. 72; asphaltic, 73; bituminous, *ib.*
 Cochrane, Admiral, declaration of blockade by, i. 339.
 Coffee, importation of, ii. 182.
 * Colden's, Lt. Governor, observations on the diseases of New York, ii. 35.
 * ——— memoir of the New York canal; a full history of the subject, ii. 350.
 Colleges, ii. 279.
 Colonial government as instituted by King James, i. 24.
 Columbia, topography of the district of, ii. 422.
 ———, Carolina, ii. 462.
 ——— College, ii. 386.
 Columbus, ii. 411.
 Commerce and navigation of the United States, ii. 175; state of, previous to 1789, *ib.*, rapid increase of, *ib.*; state of, from 1807—1830 176; exports, 177; products of the sea, *ib.*; of the forest, *ib.*; of agriculture, *ib.*; exports of manufactures, *ib.*; imports, 178; total amount of imports, 184.
 Concord, ii. 337.
 Confederation, system of, adopted, i. 270.
 Congregationalists, ii. 255.
 * Congress, provincial, their proceedings the next day after the battle of Lexington, i. 224.
 Connecticut, topography of, ii. 345; trade, 346; chief towns, 347; history of, i. 83; Dutch settlements, *ib.*; emigration from Massachusetts, *ib.*; hostilities of the Indians, 84; constitution of, 87; union of the colonies, *ib.*; patent granted by Charles II., 88; Indian hostilities on the river, 89; penal enactments, 92; infringements on civil and religious liberty, 96; constitution modified, 97.
 Constitution of the United States, ii. 227; amendment of, 230.
 Convention, general, in 1727, ii. 234.
 Copper, ii. 70.
 Cornwall, ii. 348.
 Cornwallis, Lord, surrenders with his army, i. 287.
 Corydon, ii. 413.
 Cotton, culture of, ii. 145; manufacture of, 164; duties on, 180.
 Cougar, the, ii. 100.
 Creeks, treaty with the, i. 364.
 Culpepper's insurrection, i. 143.
 Cumberland, ii. 422.
 Customs, ii. 196.
 Darien, ii. 466.
 Dartmouth College, ii. 336.
 * Dearborn, in the campaign of 1777, &c., i. 264.
 Debt, amount of the public, ii. 210; proposed extinction of, *ib.*
 Declaration of independence, i. 242; of rights, 216; of war against Great Britain, 1812, 333.
 Deer, the, ii. 108.
 Delaware, topography of, ii. 418; produce, *ib.*; canals, *ib.*; chief towns, 419; *vide* Pennsylvania; contest for the possession of, i. 256; cession of, to the United States, i. 329.
 ———, Lord, arrival of, in Virginia, i. 29.
 Detroit, surrender of, i. 178, 337; site described, ii. 475.
 Dickinson College, Carlisle, ii. 404.
 Dieskau, Baron, defeat of, i. 167.
 * ——— mortally wounded in Johnson's fight near Lake George, i. 169.
 Dissenters, persecuted, i. 49, 148.
 * District of Columbia, history of; the government of; the taking of Washington; the schools in Washington; the streets; the market; soil and climate; the situation; the Capitol of the United States; the artists who ornamented the edifice, their productions; the president's house; Meridian Hill; the library; Congress; Columbian Institute; Colonization Society; the medical faculty; the manners and customs of Washington city; the nunnery, &c. &c., from the pen of the American editor, ii. 422.
 * Doctrines of South Carolina in regard to the construction of the Constitution of the United States, i. 385.
 Dover, ii. 337, 419.
 Dress, American, ii. 307.
 Duelling, bad practice of, ii. 309.
 Du Quesne, Fort, capture of, i. 173.
 * Dwight, Colonel, officer at the taking of Louisbourg, i. 76.
 Eagle, the, ii. 110.
 * Earthquakes, their effects on the waters of the lakes, ii. 18.
 Easton, ii. 408.
 Edenton, ii. 450.
 Education, ii. 278; colleges, 279.

- * Eaton, General, his exploits in Derne, at the head of a handful of troops, i. 328.
 Edwardsville, ii. 415.
 Elizabethtown, ii. 403.
 * English language, origin, rise, progress of, by S. L. Knapp, ii. 272.
 Episcopalians, ii. 254.
 Erie, Lake, ii. 7.
 Eutaw, battle of, i. 284.
 Exeter, founded by Wheelwright, i. 80; site of, ii. 337.
 Exports, tabular view of, ii. 188—195.
- Fairfield, ii. 384.
 Fairmount water-works, Philadelphia, ii. 407.
 Falmouth burnt, 1775, i. 231.
 Fayetteville, ii. 450, 458.
 Finances, tabular view of, ii. 181.
 Fish, ii. 134.
 Flax, manufacture of, ii. 181.
 * Flint's description of the Valley of the Mississippi, ii. 15.
 Florida, taken possession of, i. 354; topography of, ii. 472; produce, 473; chief towns, *ib.*; attempts of the Huguenots to colonize, i. 15.
 Forests, effect of clearing, ii. 34.
 Forest trees, ii. 84; oak, *ib.*; walnut, 85; maple, 86; birch, 87; ash, *ib.*; elm, *ib.*; chestnut, *ib.*; beech, 88; pine, *ib.*; white pine, 89; spruce, 90; cypress, *ib.*; acacia, 91; poplar, 92.
 Fossil remains, ii. 60.
 France, secret negotiation of the States with, i. 268; recognizes the independence of the States, 269; sends a fleet to their succour, 272; the United States declare war against, 318; importations from, ii. 280.
 * Franklin's, Doctor, correspondence with Lt. Governor Colden, upon stereotyping, ii. 170.
 Franklinton, ii. 418, 458.
 Frankfort, ii. 447.
 Fredericktown, ii. 422.
 Fredericksburg, ii. 444.
 French and Indian wars from 1756—1763, i. 163; causes of the rupture, 165.
 — troops arrive in the United States, i. 279.
 Frenchtown, massacre at, i. 335.
 Friends, ii. 257.
 Frontignac, Fort, capture of, i. 173.
 Fruit-trees, ii. 93.
- Garrangula, chief of the five nations, his speech, i. 120.
 Gaseous substances, ii. 82.
 Geology, facilities for research, ii. 51; results of, 52; nomenclature, 53.
 Georgia, topography of, ii. 462; produce, 463; chief towns, 466; history of, i. 155; Indian chiefs visit England, 156; its advantages, *ib.*; Spanish expedition against, 158; introduction of slaves, 159; insurrection in 1749, 160; surrender their charter, 162.
 —, College of, ii. 464.
 Georgetown, ii. 462.
 George, Fort, ii. 476.
 Germantown, battle of, i. 256.
 Gilbert obtains a charter of land in America from Queen Elizabeth, i. 18; his equipments, 19; arrives at Newfoundland, *ib.*; sails for the Isle of Sable, *ib.*; is lost with his crew in a storm, *ib.*
 Glass, manufacture of, ii. 168; importation of, 184.
 Gloucester, ii. 343.
 Gold, ii. 70; from Carolina, 448.
 * Gold, from the American mint, and an account of, ii. 202; the regulation of the gold currency, ii. 203.
 * Gordon's Gazetteer of New Jersey, ii. 403.
 * Gorham, Colonel, officer at the taking of Louisbourg, i. 76.
 Gosnold, voyage of discovery of, i. 23.
 Gosport, ii. 444.
 * Government of the province of Massachusetts Bay, i. 42.
- Gravel, ii. 58.
 * Graham's Letters on Vermont, ii. 339.
 * Greene, General, his military services and character, i. 285.
 Greenstone, ii. 42.
 Grenville's voyage to Virginia, i. 21; his second voyage, 22.
 * Gridley, Colonel, engineer of the works on Bunker Hill, June 17, 1775, i. 125.
- Hagerstown, ii. 422.
 Hallowell, ii. 335.
 * Hamilton, Alexander, a writer in the Federalist, i. 300.
 — College, ii. 386.
 Harper's Ferry, ii. 444.
 Harrisburgh, ii. 408.
 Harmony, ii. 413.
 Hartford, ii. 347.
 Harvard College, i. 54; ii. 340.
 Hatteras, Cape, ii. 4.
 Havre de Grace, ii. 422.
 Hawkins's unsuccessful attempt to find a north-west passage, i. 18.
 * Hayne, Colonel, senator in Congress, great speech of his on the doctrines of the convention of South Carolina, i. 385.
 Helena, ii. 473.
 Hemp, culture of, ii. 142; manufacture of, 251.
 Henderson, ii. 448.
 Henry, the celebrated Patrick, speech of, i. 188.
 * Hendrick, Indian chief, distinguished for his wisdom, fidelity, and bravery, i. 165.
 Herculaneum, ii. 418.
 * Heyn, Dutch admiral, scourges the sea of the pirates on the coast of America, i. 112.
 * History of New Jersey, by Smith, ii. 403.
 Hopefield, ii. 473.
 Horticulture, ii. 251.
 * —, Dr. Francis's address to the New York Horticultural Society, ii. 152.
 * Horticulturists of the United States, Mitchell, Clayton, Jefferson, Walter, Garden, Logan, Marshall, Rush, Colden, Livingston, Holyoke, Cutler, Belknap, &c. &c., ii. 153.
 * Hoyt, General, his account fully given of the battles immediately preceding the surrender of Burgoyne and his army to the American forces, i. 264.
 Hudson's voyage in 1609, i. 111.
 Huntsville, ii. 468.
 Huron, Lake, ii. 7; geological state of, 59.
 * Hutchinson, Anne, her religious opinions, her trial, admirable defence, exile, and fate, i. 38.
- Illinois, topography of, ii. 413; admitted into the Union, i. 353; college, ii. 414.
 Immigrants into the United States, ii. 221.
 Imports, total amount of, ii. 178; tabular view of, 188—195.
 * Indians, the customs, manners, modes of living, fighting, their eloquence, with some passages of their history, ii. 277.
 —, Elliot's efforts to convert the, i. 57; success of the gospel among, 58; wars of, i. 81; wars in 1790, i. 306; characteristics of ii. 311; their customs, 313; religion, 314; wars, *ib.*; number of, in the States, 316.
 Indiana, topography of, ii. 411; chief towns, 413.
 Insects, ii. 137.
 Iron, ii. 70; manufactures of, 166; importation of, 183.
- * Jackson, president of the United States; his inaugural speech, i. 330.
 * Jay, John, one of the writers of the Federalist, i. 300.
 Jefferson, his administration, i. 320; retires, i. 330.
 — College, ii. 404.

- Jeffersontown, Missouri, ii. 418.
 Jeffersonville, ii. 413.
 * Johnson's fight near Lake George, i. 168.
 * Jones's, Sir William, ingenious fragment of Greek history alleged to be from Polybius, i. 291.
- Kansas, treaty with the, i. 365.
 Kaskaskia, ii. 415.
 Keene, ii. 337.
 Kentucky, topography of, ii. 444; produce, 445; caves in, *ib.*; canal, *ib.*; chief towns, 447.
 Kidd, Captain, piracies of, i. 123.
 Knoxville, ii. 458.
- La Fayette arrives in America, i. 355.
 * ———'s departure from Washington city, i. 363.
 Lancaster, ii. 408.
 Language of the United States, ii. 272.
 Laudonniere's expedition to Florida, i. 15; his fleet destroyed in a storm, *ib.*
 Laws, American, ii. 242.
 Lead, ii. 71.
 Legislative power, ii. 235; circuit courts, 239.
 Leisler usurps the governorship of New York, i. 120; is executed, 121.
 Lewistown, ii. 419.
 Lexington, ii. 444, 447.
 * ———, battle of, i. 223.
 Litchfield, ii. 348.
 Literature, state of, ii. 281.
 Little Rock, ii. 473.
 Londonderry settled, i. 82.
 Long Island, the Americans defeated in, i. 246.
 Louisbourg, expedition against, i. 75; taken, 76; second capture of, i. 171.
 * ———, taken by the forces from New England, i. 76.
 Louisiana, purchased from France, i. 323; operations of the British in, i. 341; topography of, ii. 470; produce, 471; chief towns, *ib.*
 Louisville, ii. 448; canal, 445.
 Lubeck, ii. 335.
 * Lyman, General, second in command in Johnson's fight near Lake George, i. 168.
 Lynchburg, ii. 444.
 Lynn, ii. 343.
- Machias, ii. 335.
 * Madison, one of the authors of the Federalist, i. 300.
 ———'s administration, i. 331.
 Madisonville, ii. 472.
 Magnolia, ii. 92.
 Maine, topography of, ii. 333; commerce, 334; submits to Massachusetts, i. 60; admitted into the Union, i. 354.
 * ———, histories of, ii. 385.
 Manners of the Americans, ii. 303.
 Manufactures, 159; state of, in 1789, *ib.*; account of, 1810, 160; imposition of additional duties in 1816, 161; further increase in 1824, *ib.*; proceedings in Congress, 1828, 162; general manufactures, 169.
 * ———, rise and progress in America, i. 345.
 Marblehead, ii. 343.
 Marriages, ii. 307.
 Marietta, ii. 411.
 Maryland, history of, i. 136; granted by Charles II. to Lord Baltimore, *ib.*; rapid progress of, 137; first assembly, *ib.*; persecution of the Catholics and Quakers, 138; separated from Delaware, 139; topography of, ii. 419; produce and trade, 420; canals, *ib.*; chief towns, 421; university of, *ib.*
 Maserne or Ozark mountains, ii. 14.
- Massachusetts, topography of, ii. 339; history of, i. 39; early attempts at settlement, 40; immigration of puritans, 41; progress of the colony, 46; Gorges appointed governor of New England, *ib.*; extensive immigration, 47; disfranchisement of dissenters, 49; first representatives, 50; large accession to the colony, 52; Antinomian dissenters, 52; printing introduced, 54; laws of, 55; required to deliver up their charter, 60; confederacy of the Indians, and commencement of hostilities, 64; the colonists raise an army and disperse them, 65; hostilities of the French and Indians, 67; first paper money issued, *ib.*; new charter granted, *ib.*; the governor opposes the assembly, 73; defensive preparations of the colony against France, 75; disturbances arising from the currency question, 70; immigration from Germany, *ib.*; proceedings of the house of representatives in 1765, 189; in 1768, 196; provincial congress of, 219; insurrection in 1786, 302; convention at, ii. 233; trade, 340; chief towns, 341.
 Maysville, ii. 448.
 Memphis, ii. 458.
 Mercury, ii. 70.
 * Metcalf's meteorology, ii. 477.
 Methodists, ii. 257.
 Meteorology of the United States, ii. 19.
 Michigan, Lake, ii. 7; territory, ii. 474; produce, 475; trade, *ib.*; chief towns, *ib.*
 Michilimackinac, ii. 475.
 Middletown, ii. 347.
 Middlebury, ii. 339; College, 338.
 Military stores taken at sea by the Americans, i. 234; power, ii. 247; establishments, 208.
 Milledgeville, ii. 466.
 Mineral waters, ii. 74.
 Mineralogy, ii. 69, 172.
 Mint, ii. 201.
 * Minuit, governor of New Netherlands; his embassy to the Plymouth colony, 1627, i. 113.
 Mississippi, topography of, ii. 468; surface, *ib.*; roads and canals, 469; admitted into the Union, i. 353; river, ii. 10; inundations of, 13; navigation, *ib.*; bed of, 14; valley of, 8; climate of, 24; soil, 30, 32; formation of, 58.
 Missouri, topography of, ii. 415; produce, 416; minerals, *ib.*; trade, *ib.*; chief towns, 417; admitted into the Union, i. 354; river, ii. 10; valley of, 11.
 * Mitchell, Dr. Samuel L., notice of his elaborate memoir of the fishes of New York, ii. 134.
 Mobile, ii. 468.
 Montgomery, General, death of, i. 233.
 Monmouth, battle of, i. 271.
 Monroe's administration, i. 349.
 Monticello, ii. 444.
 Montpelier, ii. 339.
 Montreal, expedition against, i. 122; cruelties of the French and Indians, 123; surrender of, 178, 232.
 * Montcalm, his epitaph, i. 177.
 * Montgomery, death of, i. 233.
 * Morgan, in the campaign of 1777, i. 264.
 Mount Vernon, ii. 444.
 * Mugford, a naval hero of the revolution, i. 231.
 Murfreesborough, ii. 458.
- Nashville, ii. 458.
 Natchitoches, ii. 472.
 Natchez, ii. 470.
 Naval establishment, ii. 209; improvements, *ib.*; accumulation of timber and stores, *ib.*
 Navigation, act, English, i. 36; insurrection against, in Virginia, 37; in Massachusetts, 64; American navigation protected, ii. 185; amount of tonnage in 1829, 186.

- * Navy, an historical sketch of, i. 325.
 Newark, ii. 403.
 New Bedford, ii. 343.
 New Brunswick, ii. 403.
 Newbern, ii. 450.
 * Newburgh Letters, an insurrectionary movement in the army, at the close of the revolutionary war; Washington's address on the occasion, i. 295.
 Newbury, ii. 339.
 Newburyport, ii. 343.
 Newcastle, ii. 419.
 New England, ii. 333; state of, i. 55; union of the colonies, *ib.*; commissioners appointed by Charles II. to visit, 64; complaints against the colonists of, 66; expedition of France against, 75; theology of, ii. 267.
 Newfoundland, taken possession of by Sir H. Gilbert, i. 19.
 New Hampshire, topography of, ii. 335; trade of, 336; chief towns, 337; history of, i. 79; union with Massachusetts, 80; Indian wars, 81.
 * ———, history of, ii. 337.
 New Haven, settled, i. 86; described, ii. 347.
 New Jersey, topography of, ii. 391; canals, 397; rail-roads, 400; trade, 401; chief towns, 403; college of, 401; history of, i. 127; conquered by the Dutch, and surrendered to the English, 128; government of Andros, *ib.*; his tyrannical proceedings, *ib.*; first assembly, 129; the proprietorship purchased by Penn, *ib.*; character of, *ib.*
 New London, destruction of, i. 288.
 New Madrid, ii. 418.
 New Netherlands, granted by Charles II., i. 116.
 New Orleans, ii. 471; defence of, i. 341.
 Newport, i. 110; ii. 345, 448.
 New York, topography of, ii. 348; roads and canals, 349; trade, 384; city of, 385; history of, i. 111; granted to the Dutch West India company, 112; extend their settlement, *ib.*; the English and Dutch unite in a war against the Indians, *ib.*; the English conquer the Dutch, 116; state of the colony, 118; English government instituted at, *ib.*; taken by the Dutch, 119; restored by the treaty of peace, *ib.*; expedition against the Five Nations, *ib.*; added to the jurisdiction of New England, 120; effects of the revolution of 1688 at, *ib.*; contests between the governor and assembly, 125; various administrations, 126; state of, in the middle of the 17th century, 127; petitions of the assembly of, 186; convention of colonial delegates at, 189; the governor burnt in effigy, 191; abandoned in 1776, 250.
 * ———, a full account of the city; the settlement; the early history; the population at different eras; the ancient buildings; description of bay and harbour; of the trade and commerce of the city; public buildings, &c. &c. &c.; from the able pen of Dr. John W. Francis, ii. 389.
 Niagara, Fort, destruction of, i. 169; again taken, 174; falls of, ii. 348.
 Norfolk, ii. 444.
 * North Carolina; the plains; the rivers; the flat country; the canals; the rise; digging the canals shows the formation of the soil; the extent of the swamp; the analogy between this country and Poland, as described by Herodotus; diseases of North Carolina, ii. 448.
 Norwich, ii. 347.
 Nottingham, ii. 422.
 Nova Scotia, successful attack on, i. 166.
 Ohio, topography of, ii. 408; canals, *ib.*; trade, 409; chief towns, 411; valley of, 46; geology of, 47.
 Ontario, Lake, i. 7.
 Opossum, the, ii. 104.
 Oregon, District of, ii. 476.
 Ornamental trees, ii. 92.
 Ornithology of the United States ii. 110.
 Osages, treaty with the, i. 365.
 Ozark or Maserne mountains, ii. 14; geology of, 47.
 Painters of the United States, ii. 285
 Pakenham, death of General, i. 342.
 Palmetto, ii. 93.
 Paper, manufacture of, ii. 169; importation of, 184.
 Paris, peace of, i. 179; town of, ii. 448.
 Parrot, ii. 113.
 Pawtucket, ii. 345.
 Peace, treaty of, in 1783, between the United States and Great Britain, i. 293; in 1815, 346.
 Pensacola, ii. 474.
 Penn, William, memoir of, i. 130.
 Pennsylvania, topography of, ii. 403; canals, 404; trade, *ib.*; chief towns, 406; university of, 404; history of, i. 130; early settlement of the Swedes, *ib.*; subjugated by the Dutch, *ib.*; granted by Charles II. to William Penn, 131; government of, *ib.*; penal code, 132; rapid extension of, 136; retreat of the Americans from, 251; insurrection in, 308.
 * Pension, provided for certain officers of the revolutionary army, i. 380.
 * Pepperell, Sir William, commander of the American troops at the taking of Louisbourg, 1745, i. 76.
 Perth Amboy, ii. 403.
 Petersburg, ii. 444.
 Philadelphia, city of, ii. 406; founded, i. 133; first general congress at, i. 215; taken possession of by the British, i. 256.
 Philip, Indian insurrection under, i. 64; his death, 65.
 Phipps, his expedition against Canada, i. 67.
 * Pilgrims, their sufferings and character, i. 43.
 Pirates, encouragement given to, i. 144.
 Pittsburg, ii. 407.
 Plants, ii. 96
 Platte, river, ii. 11.
 Plattsburgh, the British defeated at, i. 340.
 Plymouth, fortified, i. 46; Dutch trade at, 47; described, ii. 343.
 Pocahontas, romantic story of, i. 26.
 * ———, Indian princess, the preserver of the infant colony of Virginia; her life and character, i. 30.
 Poets of the United States, ii. 283.
 Police of the United States, ii. 246.
 * Poor, General, a pioneer in many battles, i. 265.
 Population of the United States, ii. 219; rapidity of its increase, *ib.*, census, 223; tabular view, 234; of the several states, and of the counties and county towns, viz. Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Missouri, Delaware, Maryland, District of Columbia, Virginia, Kentucky, North Carolina, Tennessee, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Arkansas, Florida, Michigan, 333—476.
 Port Royal, taken by the English, in 1710, i. 73.
 Portland, ii. 335.
 Portsmouth, ii. 337; first assembly at, i. 81.
 Post-office, ii. 201.
 Prairies, description of, ii. 31.
 * Preble, gallant conduct of, in the war with the Barbary powers, i. 246.
 * Prescott, hero of Bunker Hill, i. 226.
 Presbyterians, ii. 254.
 Primitive and transition rocks, ii. 41, 44, 45.
 Princeton, battle of, i. 254; college of, ii. 401.
 Prison discipline, ii. 244.
 * Proclamation from President Jackson, stating his views of constitutional law, in opposition to the doctrines assumed by the convention of South Carolina, i. 398.
 Providence, ii. 345.
 Public lands, survey of, ii. 197; reservations, 198; appropriations for roads and schools, 199.

- Public assemblies, ii. 307.
 * Pulaski, death of, i. 274.
 Puritanism, sketch of, i. 40. persecuting tenet of, 49.
 * Putnam, in the battle of Bunker Hill, i. 226.
- Quakers, conduct and suffering of the, i. 61; public opinion against it, 62; account of ii. 257.
 Quebec, expedition against, i. 174; surrenders, 178; act, i. 211; attack on, 233.
 Queen's College, ii. 402.
 Quinnipiack, purchased by Davenport, i. 86.
- * Rain, theory of, ii. 484.
 ——— in the United States, ii. 29.
 Raleigh, ii. 450.
 Reading, ii. 408.
 Red River, ii. 12.
 Religion, state of, ii. 252.
 Religious bodies of the United States, ii. 252; tabular view of, 271; seminaries, 269, 270.
 Representatives, house of, ii. 227.
 Reptiles, ii. 132.
 Revenue of the United States, ii. 196; internal, 200.
 Revival of religion promoted by the visits of Whitefield and Wesley, i. 94; recent revivals, ii. 264.
 Revolution, American, i. 150.
 Revolutionary pensions, ii. 208.
 Rhode Island, topography of, ii. 344; trade, *ib.*; chief towns, 345; history of, i. 105; government, 109; new charter, *ib.*; college, 111.
 Ribault, his expedition to Florida, i. 15; is massacred, 16.
 Rice, introduction of, i. 147; culture of, ii. 146.
 Richmond, ii. 444.
 Right of search, claimed by Great Britain, i. 329.
 Robinson, and his church, leave Leyden for America, i. 42; settle at Plymouth, 45.
 Rock formations, tabular arrangement of, ii. 57.
 Rocky or Chippewayan mountains, ii. 6; their geology, 41.
 * Rolfe's marriage with Pocahontas, i. 30.
 Roman Catholics, ii. 253.
 Rowley, settlement of, by Yorkshire clothiers, i. 54.
 Russellville, ii. 448.
 Rutland, ii. 339.
- Sackett's Harbour, unsuccessful attack on, i. 336.
 St. Augustine, ii. 474.
 St. Charles, ii. 418.
 St. Genevieve, ii. 418.
 St. John's College, ii. 420.
 St. Mary's, ii. 422, 466.
 St. Lawrence, river, ii. 8.
 St. Louis, ii. 417; college, 418.
 Salem founded, i. 47; described, ii. 343.
 Salisbury, settlement at, i. 54.
 Salt, ii. 74.
 Sandstone, ii. 41.
 Saratoga, encampment of Burgoyne at, i. 259; mineral waters at, ii. 74.
 Sault de St. Marie, ii. 475.
 Savannah, ii. 466.
 Saybrook, synod at, i. 91; form of church government, 92; descent of the British on, 339; described, ii. 348.
 Schenectady, destruction of, i. 121.
 Secondary formations, ii. 47.
 Servants in America, ii. 305.
 Shawneetown, ii. 414.
 Shirley, General, operations of, i. 168.
- Silver, ii. 70.
 Silkworms, ii. 148.
 Slate quarries, ii. 340.
 Smith, exertions of, in founding Jamestown, i. 26; is taken prisoner by the Indians, *ib.*; is released, and discovers the source of the Chesapeake, *ib.*; made president of the colony, 27; returns to England, 28.
 Smyrna, ii. 419.
 Sons of Liberty, association of, i. 191.
 Soto, expedition of, in 1539, i. 14.
 * South Carolina, Ramsay the historian of; Mills's statistics of the state; the Medical Society; the free-masons; Literary and Philosophical Society; Museum, &c. &c. ii. 461.
 Spain, treaty with, i. 309.
 Spirits, distillation of, ii. 171; importation of, 182.
 Springfield, armoury at, ii. 344.
 Stafford, ii. 348.
 Stamp act, i. 190; repeal of, 193.
 * Sterrett, captured the first Tripolitan ship in the war with the Barbary powers, i. 328.
 * Steel, Doctor, observations on Saratoga waters, ii. 77.
 * Stereotyping, an American invention, ii. 169.
 Stillwater, actions near, i. 260.
 Stony Point, stormed by General Washington, i. 275.
 Sugar cane, culture of, ii. 146; maple sugar, 147.
 Sunbury, ii. 466.
 Superior, Lake, ii. 6.
 * Synod, called at Cambridge, Massachusetts, for the trial of Mrs. Hutchinson, i. 52.
- Tallahassee, ii. 474.
 Tariff, ii. 172; tabular view of, 173.
 Tarleton, defeat of, at Cowpens, i. 282.
 Taxes, direct, in United States, ii. 200.
 Tea sent to the United States, i. 208; destroyed at Boston and other places, 209; importation of, ii. 182.
 Tennessee, topography of, ii. 456; climate, *ib.*; produce, 457; chief towns, 458.
 Territory of the United States, various accessions to, ii. 3.
 Tertiary formations, ii. 57.
 * Thatcher's, Doctor, opinion of Ballston waters, ii. 77.
 Ticonderoga, Fort, unsuccessful attack on, i. 172; taken by the English, 174.
 Tobacco, cultivated in Virginia, i. 32; culture of, ii. 144.
 Trade winds, ii. 25.
 Transylvania University, ii. 445.
 Trap rocks, ii. 42, 53.
 Trenton, ii. 403; battle of, i. 252.
 * Trial of the witches in New England, i. 69.
 Tripoli, bombarded by the fleet of the United States, i. 324.
 * Tucker and Talbot, naval heroes of the revolution, i. 231.
- Union College, ii. 336.
 Unitarians, ii. 256.
 United States, boundaries of, ii. 4; physical divisions, *ib.*; climate, 18; soil, 29; salubrity of the, 33; natural history of, 40; geology, *ib.*; mineralogy, 69; botany, 84; zoology, 100; ornithology, 110; agriculture, 139; manufactures, 159; commerce and navigation, 175; revenue and finance, 196; expenditure of, 207; population, 219; state of society, 225; constitution of, 227; laws, 242; religion of, 252; language of, 272; literature, 281; fine arts, 284; manners 303; topography of, 333.
- Vandalia, ii. 415.
 Verazzani, expedition of, i. 12.

- Vermont, topography of, ii. 337; trade, 338; chief towns, 339.
- * Vessels, number of, taken from the British during the revolutionary war, i. 230.
- Vevay, ii. 413.
- Vincennes, ii. 413; college of, 412.
- Vine, ii. 94, 151.
- Virginia, topography of, ii. 440; produce, 441; scenery, *ib.*; chief towns, 444; history of, i. 20; partly colonized by Sir W. Raleigh, 22; permanent colony, 25; second charter of, 27; disastrous state of the colony, 28; third charter, 30; divided into proprietorships, 31; tyranny of Capt. Argal, 32; Sir. G. Yeardley appointed governor, *ib.*; convokes the eighteenth assembly, *ib.*; culprits transported hither, 33; proceedings in England against the colony, 34; dependent on the crown, *ib.*; state of, during the commonwealth, 35; navigation act, 36; insurrection against it, 37; suppressed, *ib.*; various governors, 38; resolutions of the house of burgesses, 188; proceedings of the house of burgesses, 208; convention and declaration, 212; descent of the British on, 274; constitution of, ii. 232.
- * Volney's opinion that Lake Ontario was the crater of a volcano, ii. 17.
- Vulture, the, ii. 110.
- Waldoborough, ii. 335.
- Walpole, ii. 337.
- * Ward, Artemas, general and commander-in-chief of the provincial army, before the appointment of George Washington, i. 225.
- * Warren, Joseph, who fell in the battle of Bunker Hill, his life and character, i. 226.
- Warren, ii. 345.
- Washington, General, early operations of, i. 166; his prudence in the command of the army, 237; bold operations of, and battle of Trenton, 253; resigns his command of the army, 297; his administration, 301; his farewell address, 310; he retires to Mount Vernon, 315; his death, 319; memoir of, *ib.*
- * ————'s literary acquirements, i. 298.
- , city of, ii. 422; burned, i. 340.
- , college of, ii. 404, 420.
- , Fort, capture of, i. 351.
- * Webster's eulogy on Adams and Jefferson, i. 365.
- Wesley, John, visits Georgia, i. 156.
- Wessagusset, Weston's settlement at, i. 46.
- Wethersfield, ii. 348.
- Wheat, culture of, ii. 142.
- Wheeling, ii. 444.
- Whitefield, George, visits Georgia, i. 157.
- * Wild wheat, supposed by Governor Clinton to be an indigenous plant, ii. 98.
- William and Mary College, Virginia, i. 39.
- Williams College, Massachusetts, ii. 340.
- , Roger, persecuted and banished from Massachusetts, i. 50, his character, 51; memoir of, i. 108.
- * ———, Colonel, killed in Johnson's fight, i. 169.
- * ———'s History of Vermont, ii. 339.
- Williamsburg, meeting of delegates at, i. 213; site described, ii. 444.
- William Henry, Fort, destruction of, i. 170.
- Wilmington, ii. 450.
- Winchester, ii. 444.
- Windsor, ii. 339.
- Wines, importation of, ii. 182.
- Wiscasset, ii. 335.
- * Witchcraft in New England, i. 68.
- , trials and executions for, i. 69.
- * Wolcott, major-general in war of 1745; at the taking of Louisbourg, i. 76.
- Wolf, the, ii. 102.
- Wolfe, General, death of, i. 176.
- * ———, death of, i. 176.
- Wollaston, establishment of Mount, i. 46.
- * Wompam, Indian money, how obtained, i. 112.
- * Woodhull, General, life, services, and tragical death of, i. 247.
- Woollens, manufacture of, ii. 165; duties on, 181.
- Worcester, ii. 344.
- Yale College, founded, i. 90; general synod at, *ib.*; expulsion of students from, 96; ii. 346.
- * ———, ii. 279.
- Yamassee war, i. 149.
- Yorktown, attacked and carried, i. 237; site of, ii. 444.
- York, ii. 335.
- Zanesville, ii. 411.
- Zoology of the United States, ii. 100.

DIRECTIONS FOR THE BINDER.

The back and fore-edge of all the Plates should be made square *before* they are inserted in the volumes.
Place the Contents of each volume after the Preface, and the Engravings as follows, viz:—

VOL. I.

FRONTISPIECE, (Portrait of Washington,) *to face engraved Title-page*, (Landing of the Pilgrims.)

	To face Page
Map of North America,	1
Yale College and State House, New Haven,	90
A Distant View of Schenectady on the Mohawk River,	121
Battle at Bunker's Hill,	226
The Death of General Montgomery,	233
Fac-Similes of the Signatures to the Declaration of Independence,	244
Cornwallis resigning his Sword to Washington,	288
The Tomb of Washington,	319
Capture of the Guerriere by the Constitution,	334
The President's House,	340
Washington's House, Mount Vernon,	444

VOL. II.

FRONTISPIECE, (Capitol at Washington,) *to face engraved Title-page*, (Battle of Buena Vista.)

Head-waters of the Juniatta,	5
Lake George, N. Y.,	8
Piazza of Congress Hall, Saratoga Springs,	75
Custom House, Boston,	339
Harvard University, Cambridge,	340
Amherst College,	341
Hancock House,	342
Tremont House,	342
State House, Boston,	342
Fort Connaicut,	344
Niagara Falls,	348
View of the Canal at the Little Falls, Mohawk River,	349
Military School, West Point,	370
The Palisade Rocks on the Hudson,	372
View of New York,	384
View of Newburgh,	386
View of Albany from Van Unselaen's Island,	387
Saint Paul's, Broadway, N. Y.,	388
City Hall, New York,	393
The Park and City Hall, New York,	394
Exchange, New York,	394
Source of the Passaic Falls,	398
View of Philadelphia,	406
The Race-Bridge and Fair-Mount Water-Works, Philadelphia,	407
Penitentiary, Philadelphia,	407
Battle Monument, Baltimore,	419
Natural Bridge, Virginia,	441
Harper's Ferry,	441
Episcopal Church, Richmond,	444
Capitol of Virginia, at Richmond,	444

x f E178
H5
1852
v. 2





